PHOTO-ERA

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The Sun and Moon in Photography

CARL J. COE, A.M.

DO you recall the chromos of fearful memory that were abroad in the land from thirty to forty years ago? And do you remember in particular that glorious creation of black and purple and orange in which,

> "The moon rose over the city
> Behind the dark church tower"?

By the clock in the tower the hour was clearly shown to be midnight, while close at hand sailed a sharply crescent moon! But hush! Let us not display any excessive mirth over the errors into which painters fall in "holding the mirror up to nature"; for, after all, the conventional restrictions of their art are not severe and perhaps the artist who painted the original of the chromo did not have in mind our own common, every-day earth, but some purely imaginary world in which new moons are actually to be seen high in the midnight-sky. And, furthermore, let us first investigate and see whether we, as photographers, have not many times been even more flagrantly careless in observing and interpreting nature. For our art is a more conventional one, and it is generally accepted that although hand-work is permissible in photography, it should not actually show as such in the finished product. It follows that when, on considering a certain landscape we decide that a moon or sun inserted skilfully would add to its soulful quality, we should put in such a moon or sun as might conceivably have been visible there. But this simple and readily accepted rule is not only often overlooked, but it is, in fact, seldom observed, even by photographers of some considerable repute. It seems then that a simple statement of the facts regarding the appearance of the sun and moon would be useful, although these facts may be observed readily by any one who cares to notice them.

First, let us consider the apparent *shape* of the sun and moon. The sun, of course, always appears circular, except in the rare cases when it is being eclipsed or when very near the horizon, at which latter time it appears slightly elongated sidewise, due to unequal refraction of the light from its lower and upper edges. This, however, is so slight that it may be disregarded in practice; and, in fact, we are always quite safe to draw Old Sol into our negatives with compasses. But Diana, true to her sex, is more changeable and requires more careful consideration. The accompanying six outline drawings are exact representations of the moon's appearance at different times in the month.

Number 1. Time, 2.5 days before or after new moon.
Moon rises 2 hours before or after sun.

Number 2. Time, 4.9 days before or after new moon.
Moon rises 4 hours before or after the sun.

Number 3. Time, 7.4 days before or after new moon.
Moon rises 6 hours before or after sun.

Number 4. Time, 9.8 days before or after new moon.
Moon rises 8 hours before or after sun.

Number 5. Time, 12.3 days before or after new moon.
Moon rises 10 hours before or after sun.

Number 6. Time, 14.8 days before and after new moon.
Moon rises 12 hours before and after sun.

The arrow in the figure points in every case toward that part of the sky in which the sun is at the moment. Actually, of course, it usually will be below the horizon when the moon is prominent enough to be visible in a photograph.

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At the exact time of new moon, we cannot see the moon at all—due to its being in almost the same part of the sky as the sun and having its dark side turned directly toward us.

The other consideration is the apparent *size* of the sun and moon; and here I am afraid that even such exact observers of nature as photographers, will have cause for some amazement. If on some clear evening, when there is a full moon, you will take an ordinary round lead-pencil and hold it at arm's length toward the moon while closing one eye, you will find that it appears almost exactly as wide as the moon. Now if you are a person of about average size, the pencil will be thirty inches from your eye, and its diameter being three-tenths of an inch, it turns out that one of these quantities is exactly one hundred times the other. Clearly, this means that if we were to make a picture of the moon, the diameter of the image would be one-one hundredth of the focal length of the lens; or taking a more nearly exact value from astronomical observations, the diameter of the image would be 0.0093 times the focal length of the lens. Now, if I am not mistaken, this is much smaller than you would suppose. For instance, with a lens of eight inches focal length the moon's image would be about the size of the head of an ordinary small brass-pin, and with the three-inch lens of a vest-pocket camera the image would only be the size of the cross-section of the shank of the pin—just a white dot! In the second figure is shown the size of the images of the full moon cast by several different lenses, with the focal length of the lens in inches indicated under each. It is generally conceded that, since a picture held in the hand for viewing is about sixteen inches from the eye, the ideal focal length of a lens to produce such a picture is also sixteen inches, but a picture to be hung on the wall should be made with a lens of focal length about thirty inches. Of course, in either case the same effect can be produced by using a lens of shorter focal length followed by a corresponding enlargement. We may conclude from this that the ideal size for the moon in a hand-picture is shown by the circle numbered 16, and for a wall-picture number 30 is best. Perhaps, at first, these will seem somewhat small; but, doubtless, this is due to the fact that we have become so used to see the moon portrayed grossly exaggerated in size. It may be well to mention, in passing, that the moon's apparent size is absolutely independent of its distance above the horizon.

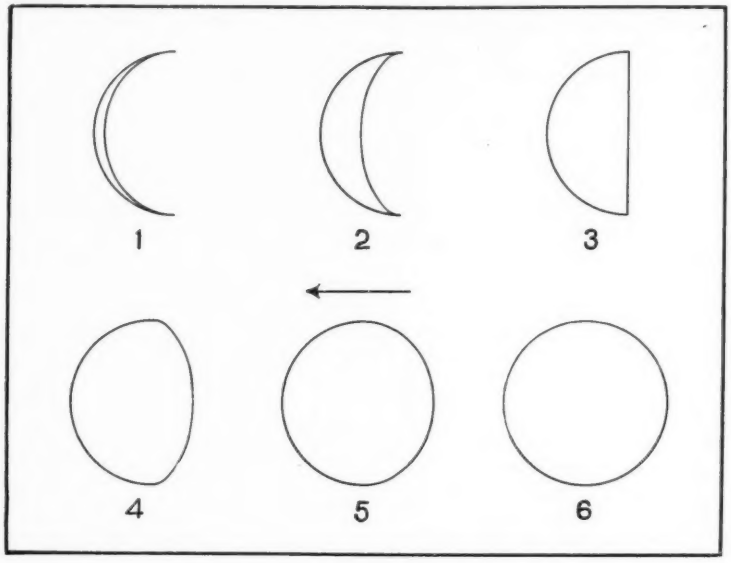

FIGURE 1

Some persons feel that the moon appears larger when near the horizon; but this is not the case, as any one may prove to himself readily by measuring the apparent size of the full moon with a pencil or ruler held at arm's length when it is just rising and, later, when it is high in the sky.

Nothing has yet been said about the apparent size of the sun; but here is a case where nature has kindly made things quite simple for us. All that has been said about the apparent size of the moon applies without modification to the sun. For, although, of course, the sun is enormously larger than the moon, still it is also enormously farther away; and, as a result, it appears almost exactly the same size as the moon and the photographer should treat it accordingly.

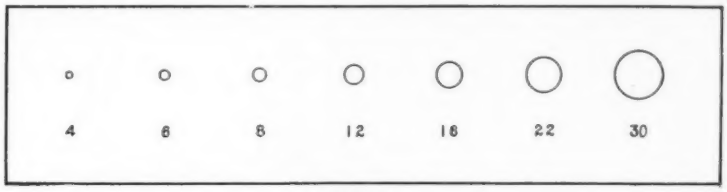

FIGURE 2

With these instructions in mind, surely we can all embellish our landscapes with suns and moons without stint, "big as life and twice as natural."

Data?

WILLIAM LUDLUM

FOR several years my camera has been reposing—neglected—in the recesses of the attic storage-room; and although I have often considered resuming the pursuit of my most treasured hobby, the business of war has interfered repeatedly and continuously. Not that I have ever been called upon to demonstrate my patriotism in the fighting-lines—being several years beyond the age-limit for active outdoor exercise—but the shortage of man-power at home made steady attention to the demands of merchandising imperative. Since the end of hostilities, my thoughts often turned longingly to my old love, and gradually the photographic bacillus propagated in my system until, at last, it developed into a full-grown case of "photoitis." No longer being able to resist the impulse to snap something or someone at all hazards, I sneaked up the attic-stairs—when no one was looking—and stealthily removed the camera from its dust-covered case. Two of the plateholders were filled and the record—a slip of paper which I always placed in the case after filling my plateholders—informed me that they contained Orthonon plates—placed there about three years ago. As this new venture into the realms of photography was more in the nature of a beginner's first attempt, I decided to experiment with the means at hand rather than waste new material, and I carried my outfit down to the shop just as it was—old plates and all.

With the assistance of a few of our good-natured employees, who expressed a willingness to stand in front of my camera and deliver any and all things photographic that they happened to possess in the way of form and feature, I attempted a few trial-exposures. That evening, after impatiently consuming my supper, I hurried to my impromptu darkroom—the cold-storage closet in the cellar—to do a little developing or, as it afterwards proved—deviling.

There is an incandescent bulb in the closet and I arranged my light—as I have done hundreds of times—by covering it with several thicknesses of red and orange paper. After testing the light, to see that it was not too strong, I proceeded to prepare my developer—some old

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"THE TAR-BABY" WILLIAM LUDLUM

three-solution pyro that I had had on hand for a long time—several years, in fact. When all was ready, I stepped out into the open cellar and turned off the main switch, leaving only the dim ruby light visible in the darkroom. I removed the plates from one plateholder, slid the plates gently into the developer and began to rock the tray carefully according to expert formulæ. Before anything in the shape of an image began to appear on the film, I noticed a strong odor of smoke and, looking in the direction of my safe-light, I detected a thin wisp of smoke ascending from the paper-covered bulb. I had no choice but to rush out into the cellar, turn off the current, then grope my way back to the developing-room, which had now become a darkroom, indeed. In addition, I barked my shins on boxes and barrels several times before I reached my destination. I looked sharply in the direction of the guilty lamp, but could detect no sign of illumination. I then returned to my developing, trusting to work out my problem in the dark, with nothing but my old-time photographic sense of time and temperature to guide me; in other words, just plain guesswork. Presently, I became conscious of a faint ruby glow reflected from the surface of the plates, and turning to the source of light found that the paper-covering around the electric bulb was smoldering. I reached up, made a quick grab and snatched the paper from the bulb. Before I could get out of the closet the paper burst into flames in my hand. I rushed into the cellar, bearing my unwelcome torch, dashed it to the cement-floor and trampled out the last remaining spark. After I was certain that all danger of fire had passed, I returned to the darkroom and my plates—by this time, negatives in more ways

"THE DRILL-MASTER" WILLIAM LUDLUM

than one. I lifted them tenderly out of the developer, rinsed them in clear water, after knocking over several jars of preserves in trying to locate the tray, and then slid them cautiously into the hypo-tank, being determined to see or rather feel the thing through to a finish—mostly a bad, very bad finish. I left them reposing in the hypo for about an hour and then turned on the light.

The resulting pictures accompany this article, and why, by the "pink-toed prophet," they are pictures at all—in any sense—will be a life-long wonder to me. They serve to demonstrate, at least, that sailors are not the only ones whose destinies are watched over by some "sweet little cherub that sits up aloft," to protect them when all is *not* well. Some guardian angel photographic surely must have peeped over my shoulder as I rocked the tray and must have stood between the blazing paper and the sensitive plates in my hour of need. The plates revealed not a blemish to the world.

Mr. Expert Photographer and Mr. Expert Chemist, figure it out in any way that you like. Probe the mystery from every known angle of demonstrated formulæ and experience and tell me why—the *why* of these pictures? I can furnish no reliable or dependable data other than described above.

In conclusion: when I tried to replace my lamp-covering, after visiting every stationer in town without result, I came to the conclusion that I had unwittingly destroyed the last bit of red tissue-paper in the United States, if not in the world. Hereafter—and I am positive about this—I shall resort to the tank!

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A VISTA NEAR HONOLULU — HERBERT B. TURNER

Hawaiian Notes

HERBERT B. TURNER

IT has been my fortune to have roamed about for a goodly number of years, first as a tourist-agent, second as a book-publisher, and for the last dozen for the pleasure of making pictures and seeing the world.

In 1894 it was my luck to stop a day or two at Honolulu on the way back from a visit of several months to the Orient. My memory of that short call had for years stood out as a garden-spot. I found it a delightful town, nestled at the foot of green mountains, and looking out upon a strangely blue sea. There were thriving shops, a busy people, and attractive homes, many of which were very pretentious in their well-kept semi-tropical grounds.

The summer of 1916 found us traveling *en famille* through the White Mountains, and the restless desire to hit the trail again was upon us, for we had been cooped up at home since our flight from Belgium in August, 1914. South America had been talked of, the South Sea Islands that had been calling for years, Java and Japan; but as our children required the advantage of a good school, none of these places met our requirements. Honolulu was suddenly thought of, and reading-matter and rates were sent for. It was soon learned that the Hawaiian Islands were well blessed with schools and that the city of Honolulu was a veritable educational center with many public schools, besides a number of private ones and a college or two. The rates from Boston to San Francisco, by any route one might desire, were between $78 and $88 and sleeping-car accommodations $19, whereas, we later found by experience, the meals *en route* came to less than $3 a day each, including tips (you see there were five of us). The steamship fare from San Francisco to Honolulu was $60; children under twelve went for half-fare by rail and boat.

With these facts in hand, we decided to be in Honolulu by the opening of the fall schoolterm in October. I looked over my camera-outfits and decided that a 4 x 5 Revolving Back Graflex fitted with an 8¼-inch Goerz Dogmar of F/4.5 aperture would be the best straight camera-outfit, for one could get speed as well as the advantage of using the single elements of the lens for long-distance shots. The lens was

fitted with color-screens of five, ten and fifteen-times exposure, as well as for autochromes. Next, I chose my constant traveling-companion, a Richard Verascope, 4.5 x 10.7 mm. fitted with 4.5 Zeiss Tessar lenses, which has several times accompanied us over Europe and far out on the Sahara Desert to strange and interesting oases. The Verascope was fitted also for autochrome-work. There is nothing to be compared to a stereoscope to make a lifelike record of a trip of this sort and the compactness of this size endears itself to the traveler. Next, it was decided to take another and larger stereo camera, a Gaumont of 6 x 18 cm. with Zeiss Protar lenses working at F/6.3. This made negatives of sufficient size to enlarge to 8 x 10, a choice of two sides to pick from and yet have a stereoscopic negative into the bargain.

For this camera, a couple of gross of portrait-films were ordered, cut to fit. This was a grave mistake, for while the negatives gave splendid and sharp prints on paper, when printed on glass as stereographs, they gave a fuzzy image. For the Verascope a supply of Standard Orthonon plates for negatives and Ilford Alpha for positives were ordered. When the outfit was packed, a twelve-inch Smith, Series III, was added for soft-focus effects with the Graflex. The Islands could be depended upon to have in stock standard sizes of plates, films and paper, as well as chemicals.

One summerlike day early in October found us settled in a well-known hotel at San Francisco for four days, while awaiting the sailing of our ship. It was a very much more comely San Francisco than the one of 1894. I got out the Verascope and made exposures of the principal streets, the bay, the Cliff House, beach and park during the first three days. On returning to our rooms, after dinner on the third day, it was discovered that they had been entered, and the Verascope and some of the children's jewelry stolen. Everything else had been locked in the trunks, fortunately. The manager, upon learning the facts, said he would be responsible for the camera, which had been taken from a dress-suit case, but not for the jewelry. As I had a Richard catalog, a cheque was soon in my hands and a telegram sent to the New York agent to dispatch at once a new camera, in care of my Honolulu banker.

For six days we sailed over the sea, the last three of which were as balmy as one could wish. The gulls, at times, offered tempting shots for the camera; the flying fish suggested possibilities which were never realized; and the heavy trade-clouds which occasionally bore down upon us, looking very savage, called for other exposures.

JAPANESE GIRL HERBERT B. TURNER

At length, we came to Honolulu, to find that it was not the town of 1894, but an up-to-date city of nearly one hundred thousand inhabitants, with numerous trolley-lines, automobile-filled streets, music-halls, motion-picture houses, department-stores, fascinating American, Japanese and Chinese shops and fine hotels and clubs.

Like most visitors, we chose not to settle in the city proper, but at that delightful suburb of Waikiki, with its song-famous beach nestled at the foot of Diamond Head, an extinct volcano. This spot lies about twenty minutes away by trolley from the heart of the city, or in other words, about three and a half miles out. At Waikiki, amid cocoanut-palms, semi-tropical foliage and brilliant flowers, are several hotels and boarding-houses. We had heard of a small hotel, called the Ainahou, which had for years been the home until her death, of Princess Likilike, the Queen's sister. We found it situated

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just back of Waikiki Beach in some twelve acres of private park which was a fairyland of cocoanut, date, royal, travelers and other palms, interspersed with bread-fruit, mango, fig and the biggest banyan-tree on the Islands. The hedge of the drive into the estate was lined with brilliant hibiscus, and a small lily-pond stood at each side of the way, filled with pink pond-lilies. The nearest scene to this enchanting spot that it has been my lot to see, is Count Lambeth's garden, just outside of the oasis of Biskra on the Sahara, so well-known by the book, "The Garden of Allah."

The main house resembled a typically prosperous New England summer-home of about the period of 1880, except its verandas were wider and used as a dining-hall and lounge. We were soon settled in a cosy, electric-lighted shack called a "bungalow," which had an outdoor screened-in living-room, leading off the principal sleeping-room, which in turn connected with a bath at the rear, and another sleeping-room on the left. This retreat of ours was separated from the main house with its dining-verandas by a small court-like space containing a rather large concrete swimming-pool of crystal-like water shaded by palms and foliage-trees.

The rate we paid for our comfortable quarters, and three excellent meals a day, in this Edenlike spot, was $180 a month for the five of us—$36 a month each. Think of it! Not only did we get our "board and bed," but they fixed up a good sized developing-room and installed in it electric lights and told me where to find the ice-box.

We soon had the children enrolled at the excellent Punahou School, as day-scholars, at the rate of $75 a year, which with its eight modern buildings of concrete and stone is situated in eighty acres of grounds surrounded by a thriving hedge of night-blooming cereus. This sounds like a fairy story, does it not? But it is only Honolulu and all true.

You may be sure that it did not take me long to find out what the city could boast in the way of photographic depots. I found that they were numerous enough—not only American, but Japanese. Of them all, however, the Honolulu Photographic Supply Company was pre-eminent with its large salesroom well stocked with a goodly variety of cameras, lenses, printing-papers, chemicals, plates and films. It is run by two college-bred brothers, by the name of Warren, who are well up in photo-chemistry and optics, with the help of a staff of pleasant and intelligent assistants. The finishing-department, which makes it a rule to develop your exposures and turn the results out printed on Velox, Azo, Artura or Cyko, as you prefer, in twenty-four hours, is in the hands of Chinese and the work is of the finest quality. The prices are the same as in the United States proper.

There were several things to learn about the conditions to photographic success. First, as to the light-value, which is by no means as fast as one would expect for twenty degrees north of the equator. However, the shops print for their customers an excellent exposure-table which it is wise to adhere to,—F/11 at one twenty-fifth of a second with a compound shutter is the speed which one will use the most, although one may be successful with F/16 at 1/25, in many cases.

As the temperature in winter and summer runs usually from sixty-eight degrees at night to eighty-four degrees at midday, the tap-water is just too warm for proper development and must be reduced a few degrees by ice. The developing-tank is worked best in a pail of chilled water, or in case of a tray, by placing it in a larger tray of chilled water with some ice in it. Plates must be fixed in a chrome-alum fixing-bath, such as that given in the Cramer Manual. Prints may be fixed in the regular acid hardening-bath, such as Eastman puts up or gives the formula for.

It did not take me many weeks to get tired of carrying around a camera of the size of my Revolving Back Graflex, and I soon sold it at a ten per cent loss and bought a 3A Special Kodak fitted with a 2B, Bausch and Lomb Tessar and a 5 x 7 Premo (No. 9) to which I had fitted my Goerz Dogmar and Smith lenses. It was then I felt myself well equipped for the beauties of the Island, except that I needed a car to reach the grander scenes. I looked into the matter and shortly purchased a second-hand Ford for $340, including a new shoe and two tubes, which I sold the following April for $290 to the first customer who answered my advertisement in one of the Honolulu daily papers.

I was now well fixed, and the way we ran that poor "Lizzy" about the Island of Oahu was a shame. We covered nearly 5000 miles on a bit of land not much over one hundred miles in circumference. We climbed the mountain-roads, we did the valleys, we sped along the shores and beaches and, where there were no roads, we went just the same. Under the back-seat of the thing we carried a folding stove and eatables, such as ears of corn, steak, lobster, pineapples, etc., and on a fender a bag of charcoal. Between us, the photographic outfits were packed, and with gasoline at only twenty-one cents a gallon and the car doing eighteen to the gallon, we had no care except to reach a bed before midnight.

On the route around the Island, at about equal distance from one another, are four hotels

MOUNTAIN-RANGE NORTH OF OAHU
THE PALI RANGE
HERBERT B. TURNER

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OLOKELE CANYON, KAUAI
MOTOR-ROAD NEAR HONOLULU
HERBERT B. TURNER

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which are very comfortable and, when we found it convenient to our plans, we stopped at one of them.

With thousands of Japanese, Chinese, Koreans, Hawaiians, Filipinos and South-Sea Island peoples, besides whites of all nationalities, one can make genre-studies to one's heart's content. The women of the Oriental countries all dress in their native costumes; thus you meet the graceful Japanese women in kimonos, the Chinese, in their embroidered jackets and trousers; the Filipinos in big-sleeved waists and so on.

Waikiki Beach, with the white girls diving, swimming or lying about on the sand in one-piece bathing-costumes; the surf-board riders tearing along on the crest of waves; the outrigger canoes coasting on the surf with Diamond Head as a background, offer material for the best of technique.

Honolulu harbor, with ships from all parts of the Pacific and its Japanese fishing-fleet of sampans, makes good hunting-ground. Then comes the market with its strange mingling of nationalities and costumes, its odd fish, vegetables and fruits. Just beyond is street after street of Oriental shops and homes with queer signs and interesting contents, with a temple and theater to give effect.

Farther afield, yet on the trolley-line, are Chinese duck-farms, rice-fields and taro patches, where on an occasion you may see a water buffalo hitched to a plow sloughing about guided by a Chinese farmer. Still farther off are sugar and pineapple plantations with their activities, to photograph.

To me the land- and waterscapes called strongly. The deeply eroded mountains, lovely valleys, waterfalls, small rivers and palm vistas against strangely clouded skies; the rocky coast with great waves dashing their surf high in the air, and in contrast the pretty homes set in semi-tropical gardens shaded by unfamiliar trees, from which the magenta and purple Bougainvillea vines festoon themselves, offered compositions galore.

The autochromist will delight in the sunsets, undreamed of in strangeness and beauty on the mainland, in the rainbows and the brilliant color, everywhere. And when the night falls and the camera has been laid aside, there are the music-halls, the "movies" and the roof-garden on Honolulu's greatest hotel with its dancing and its iced drinks; or Heinie's restaurant over the sea at Waikiki, where the dance to Hawaiian music is always on; or yet, again, the occasional concerts and hula dances at the hotels.

If one prefers a quiet evening with books, one has Honolulu's large and well-stocked library to draw from, where the most recent books may be had as well as those of the past.

I have no space—even if I could find words—to describe one of the world's greatest views, that from the Pali, some seven miles back from the city, where one looks down on eighteen miles of variegated plantations and a turquoise sea relieved by fantastic mountains.

All this is on the Island of Oahu, yet there are seven other inhabited islands, of which Maui, with its great extinct volcano, rising 10,032 feet, its valleys and beautiful shores, is worth a visit.

Hawaii is less than eighteen hours by steamer to the southeast from Honolulu. The steamer lands one at the little city of Hilo, where attractive hotels offer rest. Photographic films are to be found at the drug-stores, so one may make doubly sure to have enough, after visiting the waterfall outside of the town and making the scenic railroad trip of thirty-four miles to Paauilo and back, through marvelous scenery of varied grandeur, before taking one of the automobile stages to the Volcano House, a modern hotel, thirty-one miles distant, on the edge of the great crater. From here can be seen Mauna Kea and Mauna Loa, capped with snow and rising 13,825 and 13,675 feet. Looking down from the hotel, the eye sees a crater of cold hard lava, 7.85 miles in circumference, suggesting a moon crater, near the middle of which rises the smoke of the "House of Everlasting Fire"—one of the wonders of the world. An automobile road takes you easily to the firepit; but a camera-man should walk the three miles to it over the cold lava bed, for the curious formations on the way will offer many tempting pictures. A tripod comes into play at the active volcano, for one must stay well into the night to see the weird and awful scene at its best. Thick clothing and a coat are found to be indispensable.

There are no words to describe this awful lake of boiling lava with orange-colored geysers of liquid fire, except "awful" and "fascinating." I made a series of twelve autochromes of it, after I had overcome my terror of the vast, ulcerlike thing. Starting in at three P.M. with three and a half seconds exposure at F/8, I finished at eight P.M. amid the surging chaos of orange red with an exposure of ninety seconds at F/4.5. Strange to say, all the autochromes were good. Of course, I made many exposures with my 3A Kodak, but no photographs; even the excellent motion-pictures that have been made fail to give an adequate idea of the scene. The way to the crater from Hilo is in spots a dreamland of tropical foliage of which the bordering tree-fern stands out vividly in my memory.

Before closing, I must speak of Kauai, the

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JAPANESE FISHING-CRAFT HERBERT B. TURNER

northernmost island of the Hawaiian group, called the "Garden Island," a night's journey from Honolulu. Here—the mountains are more deeply eroded than on Oahu and in Waimea Canyon, which is reached easily by horseback from the town of Waimea—I found a second Grand Canyon of the Colorado in color and formation. Huge gorges run into the heart of the island, among which Olokele Canyon, several thousands of feet deep, impressed me as one of the most picturesque sights it has been my fortune to behold.

I must not forget to mention the little towns, the plantations, the waterfalls, the wonderful beaches backed by towering, fantastic mountains —especially the picturesque and charming Hanalei section on the northern coast.

Hawaii may be visited in summer with as much comfort as in winter. The highest temperature recorded over a series of years is eighty-seven, I believe. September and October are, perhaps, a little sultry; but the rest of the year is ideal.

Mark Twain puts it comprehensively when he describes the Hawaiian Islands as "the loveliest fleet of islands that ever dropped anchor in any sea."

Now for a confession: I had too many cameras. If I went again, I would confine myself to a 3A Kodak and a Verascope, and trust to the enlarging-camera and a Verito lens on my return to get results.

You Americans have pictorial material that would drive us in England crazy. You must, you simply must, paint and tell of this amazing America. Our painters are still wallowing in the slough in which for years they have been deep. The war itself has failed to pull them out. Exhibitions of our artists' work display an incredible lack of interest in the everyday-affairs of life. As the periodic exhibitions come and go, what do we behold upon the walls of our academies? For the most part rows of lifeless portraits; landscapes which, because of the scant local color they possess, are attempts to depict we are at a loss to say what quarters of the globe; still-lifes, and always nudes.

Nudes there are on trees; nudes ambling beside brooks; nudes sprawling upon sofas. Pink nudes we see, red nudes, blue nudes, and chalky white. Well painted they are almost always, cleverly, dexterously; but why, we question wonderingly, do our artists give their talents to subjects such as these? What have nudes to do with the problems of the world?

The greatest questions of the ages confront man to-day. There has been no moment in history more fraught with possibilities. All nations of the earth are tense with hope, with expectation, with passionate desires. All have visions and ideals. Humanity is grasping after brotherhood. And brotherhood is now a thing all but accomplished. The great forces of the age have brought the dream about. Man has harnessed matter and fused the nations into one. He flings his railroads from shore to shore, ploughs the deeps with mighty ships, connects the continents, the races, with airplanes, liners, telephones, wireless and ocean cables. And as he builds his railroads, ships, man fills the heavens with his message, rears beauty against the clouds. The furnace roars, the buildings tower, the scaffoldings of shipways loom, steam and smoke boil into the sky. What subjects these are for the artist! Behold the chances to keep before the eyes of men the beauty and the purpose of their work! *Thornton Oakley.*

Photography in the Tropics

F. WESTON

THE great source of difficulty in the tropics is not the heat but the damp. Heat alone is easily dealt with, but the combination of heat and damp makes the lot of the photographer by no means an enviable one. Damp is the great enemy, but insects and germ growths, which thrive on gelatine, have to be reckoned with. Nevertheless, with forethought and reasonable care, one's hobby can be carried on with success, even in the worst climates.

Apparatus

The first consideration is choice of apparatus. One reads much about special tropical models, but it is surprising how few one sees in actual practice. Out of every hundred cameras one comes across in the tropics, ninety-nine are just the ordinary varieties; and for those who are only birds of passage, or who indulge photography only in the dry season, these are quite good enough if not exposed too long to the rays of the sun. In the damp weather, however, if the camera is not very carefully kept in a drying-room or in an airtight case, mildew soon covers all the leather, the leather itself begins to peel off, and glued parts to fall to pieces, so that the camera quickly becomes useless. Therefore, if one intends to do photography at all times of the year, and wishes the camera to be as handy as possible, some special model is necessary; but in most cases a brass-bound camera of mahogany would be just as satisfactory as one of teak, and would be much lighter. Of course, in cases where the very worst conditions have to be met—and there must be no doubt whatever about the capacity of the material to stand them—teak is the wood par excellence; but such cases are very rare. In such a model the bellows must be of Russia leather, which is not so loved of insects as the usual kind; and steel should be avoided altogether. In fact, steel should not enter into the composition of any apparatus to be used in the tropics.

If a focal-plane shutter is used, it must be borne in mind that rubber quickly perishes in a hot, damp climate, so that the fabric should contain none of that material. In choosing a lens, it should be seen that all the components are readily accessible for cleaning, and for the very worst conditions a brass mount is better than aluminum, which will not resist the climatic conditions so well as brass. The ordinary lens-cap is very susceptible to damp, and for that reason is generally a source of evil rather than good. It is better to have the lens unprotected than covered with a damp lens-cap. A brass or metal cap, however, is quite safe.

The glare of the sun is so great in the tropics, especially where roads and buildings are white, that a lens-hood is more desirable than in England. If a focusing-cloth is used, it should be white on the outside. It is astonishing how hot one becomes under the usual black cloth. If an antinous release is used, its core should be of brass or copper, not steel.

Materials

As regards materials, it is preferable—if much work is done—to get them direct from England (or the United States). Plates stand damp better than films; in fact, I have known a spool of films become a solid mass. Plates are best sent out in soldered tin boxes, two dozen in a box. If opened only as required, good plates stored in this way will last for years. In that case it is advisable to store them as dry as possible, in an air-tight case for example, as otherwise rust may in time eat through the boxes. Paper should be kept in the same way, or in metal boxes sealed with rubber tape, or cylinders similar to those supplied for platinum paper. If rubber tape is used, it should be renewed frequently.

Rubber bulbs and tubing should be stored in the dark, kept as cool as possible, and be rubbed over liberally with French chalk, which prevents oxidation. Care should be taken that there is no kink in the tubing, and that no chalk is allowed to get into the camera or any valves.

Filters and safe-lights are very susceptible to attack by damp and germ-growth, as they consist of a layer of gelatine between two sheets of glass. They should, therefore, always be kept in one of the cases and be frequently examined. It is a pity that the binding of filters and safe-lights for use in the tropics is not cemented with some waterproof solution or cement.

Bottles containing chemicals should be kept hermetically sealed with paraffin wax. This should be done whenever a bottle is opened. Liquid developers such as Azol keep well; and tabloid chemicals, being compressed, are not so affected by damp as loose chemicals.

There is always a tendency in very hot weather to make a coolie carry the camera if it is a large one. But this is a course to be deprecated, as he

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may drop it or have some other mishap, in which case you may rest assured that he will be very careful not to mention the fact, and you may go on spoiling plate after plate in blissful ignorance. It is also by no means an easy matter to get apparatus repaired.

Exposure

Most people imagine that in the tropics exposures are short. This is the case in bright sunshine with very little shadow; but when there are heavy shadows in the foreground it is useless to trust to one's preconceived ideas. The only thing to do is invariably to use a reliable exposure-meter, testing the light in the *shadows*, and working to results.

One of the great rules of tropical photography is to expose as soon as possible after taking the plate out of its airtight box, and to develop immediately after exposure.

Development

It is important that plates shall be handled as little as possible, and with that end it is advisable to use a tank, so that the whole of the operations can be completed without touching the plates after once putting them in. It is also desirable that development shall not be too prolonged.

Many people use ice with the water; but I have always preferred to use the water at its normal temperature, as with ice it is difficult to maintain a constant condition. With the plate I generally use (the Wratten panchromatic) I have had no trouble with frilling, provided proper care has been taken. Azol and Rytol are the developers I have always used. The first is among those worked out on the special Watkins thermometer, which shows the time of development for all plates specified on the Watkins card at any given temperature.

Amidol, owing to the fact that it can be used without an alkali, is specially suitable for developing plates in high temperatures. Any of the standard formulæ may be used. Above 80° Fahr. one may get a little fog, but the following developer can be used, it is said, up to 104 Fahr. with good results, both as regards fog and prevention of the melting of the film:

Water	35	ounces
Amidol or diamidophenol	75	grains
Sodium sulphite (anhydrous)	7½	drams
Ammonium sulphate crystals	8	ounces
Potassium bromide	45	grains

The mixed developer will not keep for more than a few days. The ammonium sulphate can be replaced by 4½ ounces of anhydrous sodium sulphate. For tank-use, it would be necessary to ascertain by actual experiment the times for development at different temperatures.

The plates should go direct from the developer into a hardening fixing-bath. The following is a good one:

Potassium metabisulphite	150 grains
Hypo	4 ounces
Water	20 ounces
Chrome alum	150 grains

Dissolve in the order in which they are named.

When washing the plates, it should be remembered that the warmer the water the more soluble is the hypo, so that washing need not be so prolonged as in England. A simple test to see whether washing has been sufficient, is to take some of the water in which the plates have been washed, and make it a pale pink with potassium permanganate. If it has retained its color at the end of half an hour, the washing can be regarded as satisfactory. Organic matter, as well as hypo, however, will turn the water brown, so some unused water should be tested at the same time.

With these precautions, frilling should be rare even if ice is not used, but should it occur the plate should be soaked in methylated spirit and the film pressed down with the finger.

Drying Negatives

The adventures of the plate, however, are not ended yet. In damp tropical weather, it is astonishing how long it takes to dry, and in the meantime the gelatine is apt to become pitted, or germs spoil it in patches, whereas cockroaches and other pests delight in making a meal from the most important spots. Hardening is some protection against these; but a further safeguard, so far as insects are concerned, is to make a rectangular frame with a post at each corner, so that the whole can stand over the drying-rack, and then to cover it with a miniature mosquito-curtain. This is also a protection against dust.

As regards pitting and germ-growths, besides the hardening the only thing to do is to dry the plates as fast as possible. A current of air from a fan should be directed on to them, or they should be placed in a drying-room (not hot enough to melt the gelatine), or soaked in methylated spirit before drying. This commodity, however, is sometimes less readily obtainable than in England, and the more water it absorbs the less is its efficacy. It can be revived, however, by putting anhydrous sodium carbonate into it. This draws the water from the spirit, which, after a few hours, can be run off, and the sodium carbonate, after drying in a shovel over a fire, is ready for use again. The best course is to dry it immediately before use, as it absorbs moisture from the air.

BOSTON HARBOR AT SUNDOWN

PERCIVAL W. FISHER

After the negative has been dried, it should be varnished, especially if it is to be used much for printing-out purposes, as with a hot damp atmosphere the silver from the paper is bound to affect an unprotected negative. If the negatives are not varnished, they should be kept face to face in metal boxes sealed with rubber tape. As mentioned previously, all rubber tape should be renewed from time to time, as it deteriorates.

Gaslight and Bromide Papers

For gaslight papers I have always used the same developers as for plates, though for bromide paper amidol cannot be beaten. If the prints are to be toned, it is essential that they be hardened, or blistering will certainly result. The following hardening-fixer is a good one. It is clear, and so allows the prints to be readily seen at all times:

Sodium citrate	1 part
Table salt	4 parts
Common alum	4 "
Potassium metabisulphite	4 "
Hypo	40 "
Water	200 "

If fogging should occur with amidol, metol-hydroquinone may be used. The film-side of papers should not be handled, and fixing and washing should be completed as rapidly as possible.

Should the reader happen to be in a district which, although hot, is at the same time always dry, he may relax certain of the precautions suggested in this article; but if it is damp (which most parts of the tropics are for long periods of the year), then, however careful he may be, he must not expect that things will always go well. All kinds of unexpected mishaps occur, but they must be dealt with by the individual as they arise.—*The Amateur Photographer.*

What is a Perfect Negative?

THE modern methods of negative development, such as by tank or other mechanical means, tend to produce uniform results; but the question that every worker should ask himself is, "Are my negatives *uniformly good?*" There are great differences of opinion as to what constitutes a perfect negative. There are devotees of the plucky negative, of the thinly graded negative and of the happy medium. The general idea seems to be to get negatives of a quality to suit the printing-process used.

If we examine the work of our leading, high-class photographers, we find invariably that their prints are brilliant without any suggestion of hardness, fine gradation and "juicy" darks, and, in most cases that have come under our observation, the negatives have been distinctly on the plucky side, but always fully exposed.

In our opinion, the printing-quality of a negative is more influenced by correct lighting of the sitter, and by full exposure, than by development. The high-class man makes a special study of lighting, but too often does the lower-grade man use the same lighting for all kinds of sitters, and, in order to preserve detail in a white dress, for example, the tonality of the other parts is sacrificed. We are convinced that the perfect negative is obtained only by correct lighting to suit the gradation and color of the subject, followed by a full exposure upon a plate that will render the color-values correctly. The development of such a plate should be a mechanical operation, and if by error it is overdeveloped, it will still yield a perfect result by increasing the exposure of the print.

When once the lighting and exposure are perfected, attention must be directed to ascertain what is the best degree of intensity to obtain on development, and while we do not in any way depreciate the thinly graded negative, we think that, from the view-point of results and reduction of waste in printing, the density should be on the full side. Every printer knows that, in order to obtain a perfect print from a thinly graded negative, the exposure must be exact, whereas a print from a negative of greater resistance may have had an error in exposure of 50 or 100% and yet yield a good result. This is a point well worth consideration, and we may remind our friends of the perfect prints that the "old-timers" used to produce from their pyro-ammonia negatives. These negatives, although appearing to be on the thin side, possessed the necessary pluck and resistance, and it was the proud boast of these workers to say that "they print well in *any* process."

We strongly advise all photographers to be quite sure that their negatives are perfect, by concentrating upon correct lighting, color-rendering and full exposure, and to avoid under-development.

Of course, there are occasions when by force of circumstances a very thin or very hard negative is produced, and for these negatives recourse must be had to the use of special papers made for the purpose.—*Rajar, Limited.*

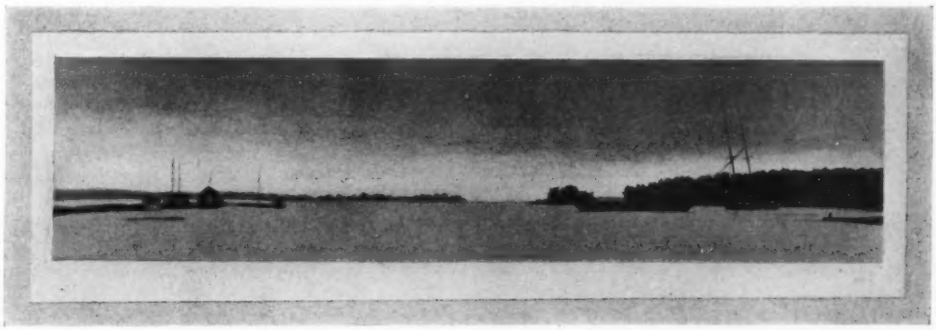
Development of Jena-Optical Glass

WILFRED A. FRENCH

SINCE so much is being written in the daily press about the successful manufacture, in this country, of Jena optical glass—and in view of a desire expressed by PHOTO-ERA readers to learn something of the early history of the industry—a sketch of the man to whom the development of this important commodity is chiefly due, may be of general interest.

Dr. Ernst Abbe, who died fifteen years ago last January, was known universally as a physicist and mathematician of the first rank, and is recorded as having rendered to optical science service of greater significance than any other man, Galileo and Petzval not excepted. The microscopist, the polariscopist, the photographer, are alike indebted to him for improvements of the highest importance in their respective instruments. Dr. Abbe practically revolutionized the science of optics. He signalized his career as a scientific investigator by radical improvements in glass for various optical purposes the practical part of this work being done by Schott, within the glass-works situated at Jena. The government, realizing the importance of this newly organized industry, granted liberal subsidies, which enabled the firm of Abbe & Schott to carry out the costly experiments on a manufacturing scale. In his various experiments along optical lines, Dr. Abbe availed himself of the new and remarkable properties of what were then well known as the Jena optical glasses, made exclusively by Abbe & Schott. The distinguishing characteristics of these valuable products were their high-refractive indices, due to barium silicates and other elements used in their manufacture, enabling Dr. Abbe and other mathematicians to calculate lens-systems heretofore impossible with other kinds of optical glass. In 1866 Dr. Abbe became associated with Carl Zeiss, the celebrated maker of microscopes and, thus enriched by precious knowledge of glass-values, the new optical firm was soon enabled to furnish science with a microscope of wonderfully increased power. In this connection, Dr. Abbe introduced his conception of the oil-immersion feature.

This he followed with an improved spectrometer and his refractrometer. To the science of photography, Dr. Abbe contributed the first cemented lens-systems of three and four components, from which the double anastigmat was evolved. Porro's invention of the prismatic telescope, designed to minimize the length, bulk and weight of the ordinary Galilean terrestrial telescope, had never been practically realized, owing to the notorious deficiencies of optical glass, not the least of which was a lack of absolute transparency. None of these difficulties being present in the new optical glass, it became possible not only to construct and place on the market a perfect type of prismatic field-glass, but to produce the relief binoculars—a practical realization of Helmholtz' conception of a stereoscopic telescope. These achievements by the Jena optical works again attested the genius of Dr. Abbe. In short, every optical instrument of consequence had gained immeasurably by reason of improvements either designed or suggested by him. Following in the path indicated by him, numerous other mathematicians have gained distinction by calculating lens-systems very similar in principle to his first anastigmats so indispensable to the photographer.



DETROIT HARBOR, WASHINGTON ISLAND — B. F. LANGLAND

XUM

FLORIDA PINES — BEATRICE B. BELL

Fog-Photography

BEATRICE B. BELL

A DARK gloomy morning with a fog hanging low over the landscape does not make the average photographer enthusiastic over the practice of his calling. But fog presents many opportunities that sunshine cannot give, and if the camerist will fare forth into the dripping world, he is sure to find them. He who wanders far afield for his subjects will do well to study his immediate surroundings, for on a foggy day he will find that familiar things take on new forms; objects unattractive in the glare of sunlight assume interesting shapes in the softening haze; detail is dissolved in mass; and the whole may be a pictorial gem, impossible to obtain in a bright light.

As a softener of unfavorable backgrounds, fog has no equal, and many a subject which falls short of being a successful composition, because of an unsuitable background, may become a real picture on a foggy day. It is certainly a favorable time to study composition. The eye is not confused with bewildering detail in the distance, and the influence of color on the resulting tone is not so great, hence the mind has to grasp mainly the disposition of masses to balance the whole, and the exposure. The latter is often a stumbling-block, and, of course, no rules can be laid down, as the strength of the light is subject to the density of the fog and the time of day. If one has not the advantage of an exposure-meter, it is well to note that the luminosity of fog is quite deceptive, and it is better to err in over-exposing rather than under-exposing. The old rule of exposing for the darkest object in the view in which any detail is desired is a safe one to follow. The foregoing remarks are particularly adaptable when photographing during a heavy fog or at hours when the light is not strong. If the moment of exposure is just at the time the sun breaks through the mist, it will be found that the light is much brighter than it appears, and that the time of exposure should be shortened.

The particular moment when the sun's rays penetrate the vapor is a propitious one for many

THE TROOPERS
THE WATERING-PLACE
BEATRICE B. BELL

BIRCHES BEATRICE B. BELL

subjects. It gives sparkle and brightness to a picture which a moment before would be dull and lifeless. It is good in shore-scenes with reflecting water; but, above all, it is the time to capture the delicate strands of the spider's web. In dry weather, in sun or shade, it is almost impossible to record the elusive web; but when the infinitesimal threads are heavy with moisture, the task is not so difficult, particularly if the subject is photographed against the light. Of course, it is necessary to show the web against a dark background, otherwise in exposing for the foreground enough to avoid a "soot-and-white-wash" picture, the web would be lost in the sky. Webs may also be photographed successfully in the early morning after a heavy dew, but then it is more difficult to avoid the sparkling reflections of dewdrops on nearby objects.

In selecting the viewpoint for fog-exposures, one must remember that it is the foreground that gives stability to the picture. Even if the main object is in the middle distance, the immediate foreground is very important as it includes the darkest tones in the picture and is therefore conspicuous. A tree-branch to break up the blank sky is often useful and sometimes very decorative, and also serves to emphasize the fogginess in the distance. In springtime, before the buds burst forth into life, the bare branches silhouetted against the mist make interesting tree-studies.

In any section where fog is prevalent, there are subjects for fog-pictures. The fog more or less dense, which settles down over all the landscape, is perhaps most used by picture-makers, and the suggestions in this article apply for the most part to this type of fog. The city-dweller has opportunities for atmospheric effects in street-scenes, and one who lives in the mountains should record some gorgeous scenes,—fog in the valleys below, spread out like a blanket, or in a slight breeze rippling like waters, the hill-tops peeping through like islands in a sea of clouds. It is in the mountains, too, where the fog sweeps across from ridge to ridge, through canyons and up mountain-sides,—a vast white army, silent, majestic and unconquerable.

Some of the daintier touches are found in

ALONG THE LAKE-SHORE — BEATRICE B. BELL

the country in the early morning and at sunrise. A delicate covering of mist hangs over the low places. Across the lake, a long low bank of fog obliterates the shoreline, the tree-tops peering over the cloud giving credence to the belief that there is a shore; and near at hand thin wisps of vapor rise from the placid water, curl upward and melt into the blue of the sky.

A heavy bank of fog at sea will result in some weird sunsets and occasionally bring out the phenomenon of the "sun drawing water." This interesting spectacle is more effective when photographed in the woods with the rays of light filtering through the branches; but the accomplishment is, in a large measure, due to chance, as the most favorable conditions of fog and sunlight will not always give the desired result.

In developing, as well as printing, the aim should be for softness and delicacy of tone. A black-and-white paper is usually preferable to brown, as gray seems to be the nearest approach to fog-color, although there may be subjects, such as autumn woodland-scenes, when sepia would be suitable. A smooth, fine-grained surface should be selected rather than a rough one, as it will bring out the delicate tones in the middle distance to better advantage. Care must be taken that the foreground is not printed too dark and it may be necessary to resort to shading parts of the negative. A word as to the care of apparatus will not come amiss. Returning from fog-expeditions, the camerist should see to it that all metal parts of the camera are wiped dry and that they are gone over with a bit of oil, especially if the fog is salt, and then there will be no possibility of rust.

GREAT art has always been realistic art in the sense that it is inspired by nature studied at close range; but in observing reality the aim of all true masters has been to see deeper than mere accidents of surface or aspect, and to grip and hold the fundamental character, that they may in their turn create, not copy.

Charles Bigot.

Practical and Humorous Experiences in Photography

Part V. On Buying a Camera

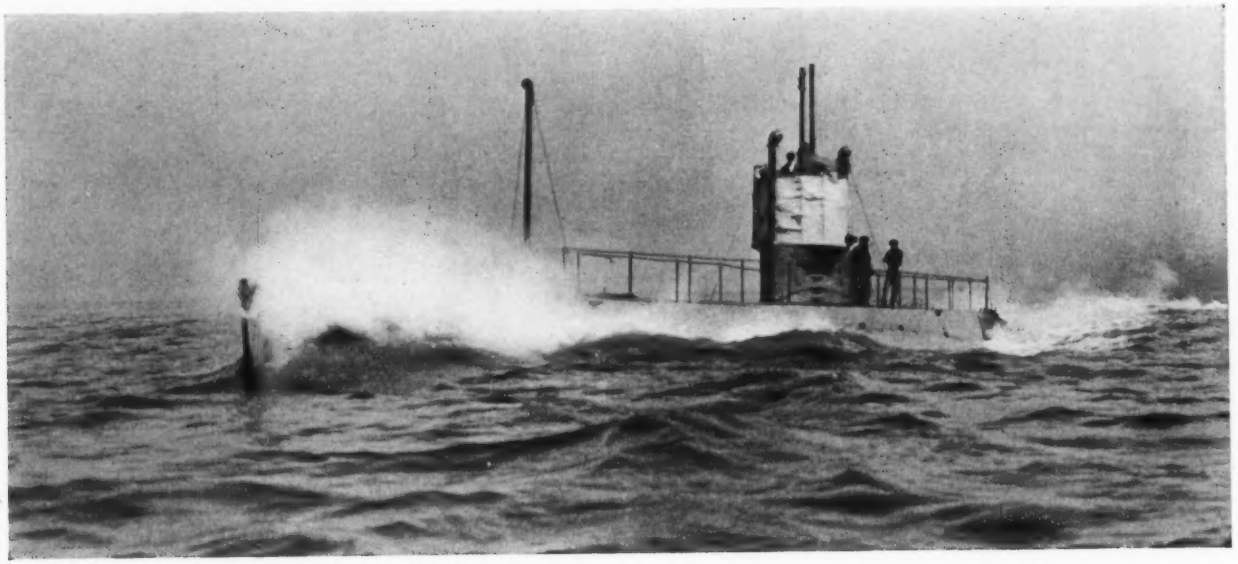
A. H. BEARDSLEY

THERE are usually three controlling factors in the purchase of every camera. First, the available funds; second, the purpose for which the camera is to be used, and, third, the personal whim of the purchaser. One of the factors may be the deciding one to the exclusion of the other two, or vice versa. Sometimes, it is virtually impossible to bring about a co-ordinate decision, for the third factor listens neither to rhyme nor reason. Thanks to this same "personal-whim" factor, we have numberless special and *de luxe* cameras that never would have been made had not some amateur's "whim" suggested new mechanical and other features to the manufacturer.

The average amateur who is about to purchase a new camera has read camera-catalogs—covers and all—for weeks. He has attempted to solve the problem of the size of picture he prefers. Ten to one, when he decides upon the size, the cost of the camera is beyond the available financial limit. On the other hand, a camera within the stipulated amount does not make the size of picture he desires. Obviously, some concession must be made. Again, there is the problem of a satisfactory camera requiring a size of dry-plate or film that makes the cost of up-keep too great for financial comfort. Even as with automobiles, it is not always the original cost that must be considered, but the up-keep for months or years afterward. Related to the size of picture is the size and weight of the camera. This adds still another problem for the amateur to solve before he can purchase his camera intelligently and to the utmost advantage. The effectiveness of modern enlarging-methods has made it possible for the admirer of a 5 x 7 picture to use a vest-pocket camera that makes 1⅝ x 2½ pictures and then to enlarge the best of these small negatives to 5 x 7. The number of excellent vest-pocket cameras now on the market is legion, and they enable the camerist to make pictures 1⅝ x 2½ to 2¼ x 3¼ inches, all of which may be enlarged to any reasonable size that the camerist prefers. In view of this fact, why purchase a 5 x 7 camera when a vest-pocket will apparently do just as well? There are many who prefer to shoulder the extra cost of a camera that will permit the camerist to make contact prints of the size of picture that he likes. Whether justly or not, these camerists claim that no 5 x 7 enlargement equals in technical quality a 5 x 7 contact print. Since both sides of the contention have loyal adherents, it behooves me to assume a neutral position. The point in question can be settled only by the individual after much deep thought in quiet seclusion. If he asks for advice indiscriminately, he will purchase either the wrong camera or give up the entire matter in disgust.

Perhaps the easiest way to settle the financial part of camera-buying is to do as a friend of mine did not long ago. He knew positively nothing about cameras and cared less. For several years, he and his wife lived happily without ever feeling the need of a camera. One day my friend became a father, and from that hour he joined the Knights of the Camera-Bug. He hurried to get a camera so as to have it ready to photograph baby's bath. Did he consult camera-catalogs, write long letters to manufacturers, seek advice or consult his bank-book? Not at all! One glance at his pocket-book containing a five-dollar bill was enough. The next moment he hurried to a photo-supply store, asked for the best five-dollar camera, bought two films for it and hurried home. The entire matter was attended to within a half hour. Moreover, his pictures were a success. Hence, at the outset, decide upon the exact amount you feel prepared to spend for a camera. Then, go to a reliable dealer and ask him to give you the best equipment that he has for that amount and one that makes the size of picture that you prefer.

Let us suppose that I have twenty-five dollars that I feel able to spend for a camera. My first step would be to decide whether I would use dryplates, roll-films, or film-packs. This done, I would obtain catalogs describing cameras for dryplates, roll-films or film-packs, as the case might be. Next, I would find out the best lens and shutter-equipment suitable for a twenty-five dollar camera. If I did not know enough to find this out by myself, I would ask the assistance of a competent camera-salesman or amateur photographer. In no circumstances, would I ask more than one or two; for the more I asked, the more confused I would become. My last step would be to go to my photo-dealer, ask for the camera in question, obtain his instructions with regard to its manipulation, give him my



AMERICAN SUBMARINE

COURTESY OF *SEA-POWER*

twenty-five dollars and go home to study my new outfit thoroughly—inside and outside—before I made one picture.

Once more let me caution the reader against the obsession that a hundred-dollar camera in inexperienced hands is to be preferred to one costing twenty-five dollars. Make up your mind that the cost of a camera has nothing whatever to do with photographic success, unless human efficiency equals mechanical perfection. True enough, the more money you spend the better camera you will obtain; but if you do not know enough to use it to advantage, its expensive features are of no value to you. Whether you spend two or two hundred dollars, master your camera; you can obtain good pictures in no other way. Make sure that you receive the best camera-value possible for the money you invest; and then, by careful manipulation of the camera, get the most pleasure possible out of every picture you make. The cost of a camera is forgotten if you make good pictures with it; if you do not, its cost hangs like a millstone around your neck forevermore.

The purpose for which the camera is to be used is second in importance to the cost. It is well to bear in mind that no one camera on the market will meet every requirement. This brings you to the necessity to decide whether it is general, scientific, speed, portrait or genre-photography that is uppermost in your mind. Obviously, box-form cameras are well suited to average general photography; but, on the other hand, they were never intended to make speed-pictures. Although this fact should be apparent to the veriest tyro, it evidently is not. Witness the many box-form cameras to be seen in the hands of spectators at a baseball, football or other athletic event. True, under favorable conditions they obtain results now and then; but it is the exception and not the rule. It is equally inadvisable to go to the expense and trouble to master a reflecting-camera when your photographic activities are confined to still-life pictures. Again, do not purchase a 3¼ x 4¼ roll-film camera and expect to do portrait-work equal to that made with an 8 x 10 portrait-outfit. All these observations may appear to be absurd in cold print; but I know from experience that they are based upon fact. Some amateurs expect too much and others do not expect enough from the cameras that they purchase.

In the days when I was the proud owner of a 3½ x 3½ Bulls-eye box-camera I went on my summer-vacation. It so happened that I was the only member of the party to own a camera. In consequence, I was immediately inducted as staff-photographer. During those two weeks nothing short of darkness prevented my snapping all manner of diving, boating, baseball, tennis, group and indoor-pictures. Not having any developing-outfit at hand, I felt free to assume that my picture-record of our vacation-exploits was a huge success. This ignorance of impending calamity was photographic bliss. Without exception, I snapped at every conceivable subject regardless of light, speed and weather-conditions. Whenever some one wished to have a picture made, I made it. Although some of my companions were often inclined to question my judgment in attempting to photograph a tennis-match late in the afternoon or a beautiful sunset, nevertheless they politely refrained from comment. Evidently, they chose to abide by the final results. The day of reckoning did arrive. Five passable pictures out of forty-two attempts was the final score. The next summer I noted that *others* carried cameras—no doubt, they had decided that there was safety in numbers.

Without a doubt, the most satisfactory outfit for the serious worker of a pictorial or semi-scientific turn of mind is a plate-camera. With such an equipment he can indulge in many experiments that could not be attempted with a roll-film outfit. One moment he can make a distant view and the next instant photograph the flowers at his feet—thanks to a long-bellows extension and a ground-glass focusing-screen. The average vacationist uses a roll-film camera to the greatest advantage. His pictures are made usually without much thought of composition or technical value. As long as he obtains a fairly presentable "record" of his summer-outing, he is satisfied. To exchange the two types of cameras mentioned between the two types of amateurs would result in much unnecessary confusion and disappointment. Endeavor to have a definite photographic purpose in mind, then buy a camera that practically and financially comes the nearest to meeting your needs.

The "personal-whim" factor in camera-buying is a study in psychology. Many times, it is virtually impossible to make head or tail out of the ramifications of the purchaser's mind. One day, I happened to be at the camera-counter in a well-known photo-dealer's store at the moment when the salesman thought that he had made a sale. In fact, the customer was actually counting out his money when a friend of his walked in.

"Hello, Charley!" he exclaimed heartily. "Bought a new camera, eh? Let's look at it!"

"Charley," acknowledging the greeting, shoved the camera toward his friend.

"Pretty nifty, Joe," he said proudly. "I've been three years making up my mind to buy

MORNING-GLORY WILLIAM NORRIE

that camera. It's got everything on it that a man could possibly want on a 'regular' camera."

"Joe" nodded his head and continued his critical examination. At length, he shoved the camera back toward the salesman.

"It's all right, old man; but there's one thing I don't like about it."

"Well, what is it?" Charley asked hastily.

"Nothing much, only I'm afraid that front isn't solid enough. Look here," and he picked up the camera, "see how that whole front wobbles?"

"That's not enough to make any difference," Charley replied confidently.

"Yes it is, too," said Joe with conviction. "You remember that *de luxe* camera I bought last spring equipped with a fine anastigmat lens? I didn't get one decent picture with it all summer just because the front wobbled."

"But, my dear man," Charley objected, "the front on this camera doesn't wobble enough to amount to a hill of beans."

"All right, suit yourself," remarked Joe with a sort of I've-done-my-duty expression on his face. "You asked me what I thought of it and I've told you—that's all!"

"Perhaps you're right, Joe," and Charley stopped counting out his money. Meanwhile, Joe glanced over the cameras in the showcase.

"Let's see that one near the end," he said to the salesman. "Look here, Charley," he added, "here's the camera just like mine. See, the front is as solid as a rock."

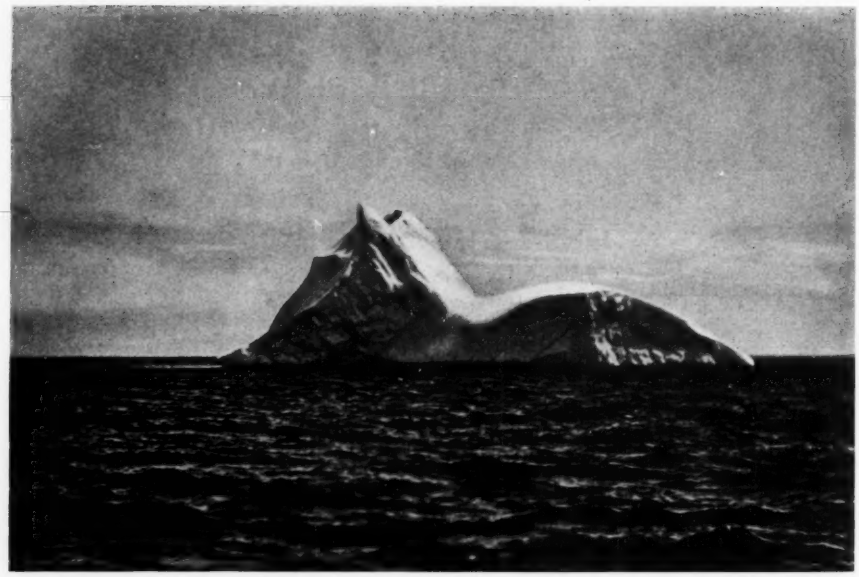
"Well, what of it?" Charley remarked somewhat irritably, "it hasn't got all the adjustments on it that I want."

"Forget those adjustments! You'll never use them if you do have them; and, besides, what good are they if the front wobbles?"

This argument, added to the fact that the camera Joe praised so highly was five dollars cheaper, caused Charley to purchase the outfit with the "non-wobbling" front. The salesman, under his breath, wished that Joe would go to the heated hereafter before he "queered" another sale. Thus, in a few moments did the decision of three years come to naught.

The reason for the countless "special" cameras now on the market is nothing less than the practical result of whims. I do not refer to adjustments of optical and practical value; but rather to the many little extras or methods of manufacture. For example, a view-finder is practical, effective and eminently serviceable.

XUM



THE DREAD OF THE NORTH ATLANTIC — WILLIAM H. PIERCE

Witness the many different types that are now fitted to cameras. Some you look through; others, you look into, and still others are a combination of the two. No doubt, many are of greater effectiveness than others; but the fact remains that the one purpose in mind is to show the camerist a miniature view of his subject and all good view-finders do this well enough for practical purposes—even if some "cranks" do not think so. By "cranks" I mean no disrespect. As a matter of fact, most "cranks" are pioneers. They demand things that the rest of us never thought of and never would think of. Incidentally, I note that when a particularly good thing comes along, as the result of some "crank's" originality, most of us are only too glad to use it.

It has often been a source of amusement and speculation to hear the reasons advanced by camera-purchasers for their decision to buy this or that camera. Of course, many of the reasons are sound and practical; but others are amusing, to say the least. One of my acquaintances refused to purchase any camera with red-leather bellows. He contended that such a bellows would surely leak light. Another was of the opinion that a camera equipped with a set-shutter was useless, for the simple reason that any shutter that had to be set for each exposure could not amount to much. A young lady refused to buy a camera because the leather-covering was not "nice and smooth" like the *suède* purse that she carried. As a rule, the deciding factor in many cases depends upon whether or not some relative or friend has advised the purchase of the camera in question. It makes no difference apparently whether the relative or friend knows anything about cameras or not. It is but natural for a successful camerist to praise his equipment and to condemn it if he is unsuccessful. The solution of the problem is for the purchaser to stand on his own photographic feet. If he does not have the requisite knowledge, he can obtain it readily, provided that he is really eager to buy his new camera intelligently. Ask for advice; but make your own final selection. *You* are going to use the camera; have the moral courage to rise or fall by your own decision.

PHOTOGRAPHY has led thousands upon thousands of people into the magic world of pictorial art, where the masters of painting freely offer radiant companionship and perennial joy to the open-minded lover of beauty.—*Henry Turner Bailey.*

A Question of Photographic Hygiene

THE epidemic which we have called influenza, because we know of no better name, has robbed the photographic profession of some of its best-known members, and others, happily recovered, have suffered severely from it. As it is well known that the disease is most likely to attack those whose vitality has been impaired by any cause, it is worth while to consider the conditions under which many photographers work.

Comparatively few photographic studios are situated in premises built for the purpose; and, in contriving accommodation for the various branches of work, there is often overcrowding and poor ventilation, both of which are inimical to health. It is, perhaps, in the darkroom that the worst conditions prevail, and now that bromide-paper is so universally employed for printing, a much larger proportion of the working day is spent therein than was the case when daylight-printing was almost exclusively the practice. In excluding white light from an ordinary room there is always a great risk of excluding air as well, and, unfortunately, few darkrooms are so contrived that when not actually in use they can be thrown open so that light and air are admitted freely. For it must not be forgotten that light has a purifying effect equal to, if not superior to, fresh air. In many cases the door forms the only source of ventilation, and, when closed, the unhappy operator has to breathe the same air over and over again. A good many years ago we were consulted with regard to a darkroom-lamp which the purchaser declared was faulty, as, after being lighted for a few minutes, it commenced to smoke and gave virtually no light. The dealer from whom it was purchased tested it in his shop and pronounced it to be in good order. This was also the case when we tried it. Finally, we ascertained that the darkroom was only about six-feet square, and that it had a well-fitting door, so that "the light that failed" did so through lack of oxygen. If an electric bulb had been used instead of a paraffin-lamp the question would not have arisen, but the operator's health would certainly have suffered. We have seen in a prosperous West-End business a darkroom which could only be used by opening the window for a few minutes after developing each set of plates. This allowed a change of air which was quickly used up by the two assistants working there, rendering another stoppage necessary. Here was a waste of time from a business point of view, besides incalculable damage to the health of the unfortunate inmates. It is not always realized that a gas- or oil-flame, which does much to vitiate the atmosphere of the darkroom, may, with a little ingenuity, be used to create a current for ventilating-purposes. Even the electric bulb is of some value in this way, and the small half watts with their much greater heating-power should be quite effective. Dampness in the darkroom is another fruitful source of ill-health, and we fear that this condition is often concurrent with bad ventilation, making a truly fatal combination. At least one instance of a robust man contracting tuberculosis through working in such a room has come under our notice recently.

We emphasize the necessity for a sanitary darkroom on account of the much greater proportion of time which is now spent in it. When daylight-printing was used for the bulk of the work, perhaps two hours a day was the limit of time for which the operator was actually boxed up; but with bromide-paper as the only medium, he is shut up virtually the whole day. Although we have inferred that a printing-out process is more healthy for the worker than bromide in a badly ventilated room, it is quite possible to conduct it under adverse conditions, the use of the open arc for printing necessitating much more space and better ventilation than is generally provided. We have in our mind one workroom where three huge pairs of carbons were being used for printing platinotypes giving off unsupportable fumes, while a large dry-mounting press still further poisoned the air. The girl employees looked like candidates for the hospital, and we were not amazed to learn that changes in the staff were frequent.

The war has taught us many things, especially with regard to labor, and nothing has been demonstrated more clearly than that true economy of labor consists in keeping the worker fit by providing healthy workrooms, working a moderate number of hours, and promoting cheerfulness generally. One bad practice which is common in most small businesses is for the workers to remain indoors during meal-times.

The more sedentary the occupation the greater the necessity for outdoor-recreation and exercise. "Health-systems" are too dull for most people and are not likely to be persevered in, but walking, cycling, rowing, swimming, tennis, net-ball, and even football and hockey are all valuable medicines—not unpleasant to take—and the employer will do well for himself, as well as for his staff, if he practises one or other if possible, and encourages his staff to engage in such reaction.—*The British Journal.*

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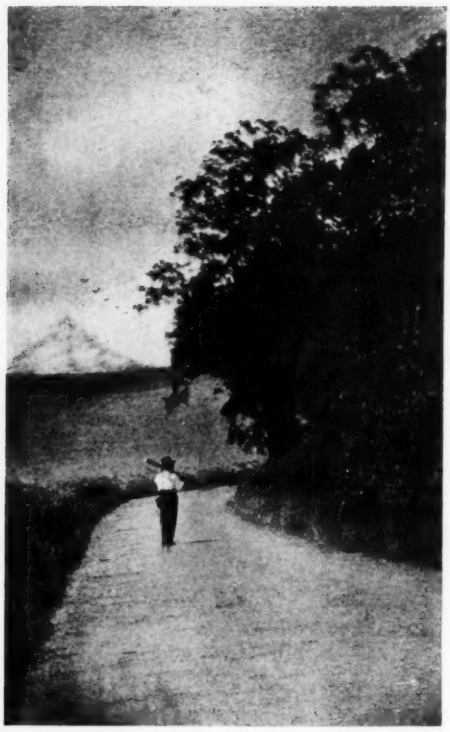

The Camerist

FRANK KING

I AM an amateur photographer. On dull days and on sunny days mine camera is strapped to my back. I hike to the tang of the hills. Behind me faintly drones the city, a mad city; where money is the basis of barter and exchange, where foul smoke mingles with fouler surroundings, where the youth is cramped, the man tied down, the woman shut in. Behind there are no waving meadows, no stirring wildwood-life, no bit of greenery to soothe the eye. All this is about, and before.

I walk on!

Ordinary folks pass by with cheery greetings, for though I am a strange creature in stranger surroundings, I am akin to them, and they to me. What care I for their stares? Am I not happy, carefree, footloose?

I walk on!

The air brings odors of spring, the birds foretell happy, future possibilities, the trees nod a greeting, all nature speaks understandingly as if my footfalls were as welcome to them as their manifestations are inspiring to me. They are my true friends, theirs is my all—my kingdom!

In one out of many homes behind me a plutocrat, by sending laborers through the hot grist of his mills, has accumulated enough wealth to have a Corot, a Landseer, a Millet and other pictorial masterpieces and he sits deep in plush-cushions and polishes his shoes on the Bokhara rug while admiring them, but I . . .

Taking the open road into the wide, free spaces, *I make them!*

EDITORIAL

Harmony in Composition

A THOUGHTFUL correspondent has sent to the editor the following quotation by Henry White—"The highest sense of art implies symmetry, order, and avoidance of waste; perhaps, also—and more than aught else—restraint." The element of restraint counts very much in the application of symmetry. Indeed, symmetry in pictorial composition should rather be avoided, although in geometrical and decorative designs, a regular arrangement of parts is often desirable, if not indispensable. But symmetry, in the sense that Henry White advises it, means harmony—the perfect accord of parts in the interpretation of a pictorial theme. Or it may be an arrangement of diversities into a unity of effect so as to produce an impression of completeness, without a jarring note or a wrong accent.

The student in pictorial photography should consider the importance of this element in composition. If a carefully planned landscape be marred by a harsh note beyond the control of the photographer, the defect can be cared for by a technical means, later on. Masses of absolute black are not essential to a well-ordered landscape or winter-scene. PHOTO-ERA contends that there are no pure blacks in nature. The photographer who desires to be truthful should prepare his prints accordingly. In an outdoor-group, it is sometimes possible to dispose of a jarringly attired figure by partial concealment. In photographing interiors, objectionable highlights may be subdued with the aid of screens, and dark places lightened by the use of mirrors. In arranging a still-life subject, it will be found that bronzes and plaster-casts do not harmonize, and to darken the latter by means of screens, or by subsequent manipulations in the negative, may prove a serious detriment. In genre-work, the photographer is frequently confused with conflicting masses of light and dark. His technical skill may enable him to dispose of the matter successfully. If the models are of his own choosing, he should suggest in advance, how they ought to be attired in order to conform to the theme he has in mind. The experienced pictorialist studies his subject with reference to adaptability, and makes his plans accordingly. The student does not usually consider the fact that a subject pleasing to the eye may not produce a satisfactory photograph.

Prices of Special Photographs

IN the opinion of an English newspaper, the usual reproduction-fee of half a guinea (about two dollars and fifty cents) should be increased in proportion to the present higher cost of production due to increased price of materials, advance of wages and living-expenses. We understand that a movement for higher rates is already in progress, and that this applies to photographs which are of special interest. There are many English pictorialists who have no difficulty to obtain a reproduction-fee of five guineas, or more, a print. Of these, F. J. Mortimer, F.R.P.S., with a uniform charge of ten guineas a picture, is probably the highest-paid photographer in the world. What professional photographer in the United States is similarly fortunate? Of course, there are isolated cases in which an American pictorialist is able to obtain fifty, or even more, for a photographic masterpiece from picture-lovers who are able and willing to pay the price.

Coming down to ordinary prices paid for special photographs, we know of many firms, institutions and individuals in this country, that pay liberally, according to the merit or novelty of the picture. An enterprising photographer who possesses a really valuable photograph which has been legally copyrighted can easily find a profitable market for it. A regular perusal of PHOTO-ERA, from month to month, will often lead the inquirer to a satisfactory source of supply or demand. Not long ago, one of the editors of the *National Geographic Magazine* was so impressed with the character of a series of photographs by Allen E. Churchill, which he had noticed in PHOTO-ERA, that he at once got in touch with the maker. The result was an immediate purchase of a liberal number of prints at a price eminently satisfactory to the artist.

G. Horlin, whose beautifully illustrated article on Sweden appeared in PHOTO-ERA several years ago, recently closed a transaction with an American publisher for several hundred five by seven contact prints depicting Sweden and its people, which yielded him a small fortune. Indeed, PHOTO-ERA appears to have been the means to bring together trustworthy firms, who are in search of special photographs and photographers able to supply such needs to mutual advantage.

XUM

ADVANCED COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA, Advanced Competition
367 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.

Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Certificates of award, printed on parchment-paper, signed by the Publisher, and suitable for framing, will be sent on request, and free of charge, to winners of prizes or Honorable Mention.

Rules

1. This competition is free and open to photographers of ability and in good standing—amateur or professional.

2. As many prints as desired, may be entered, ***but they must represent, throughout, the personal, unaided work of competitors. Remember that subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Prints on rough or linen-finish surface are not suitable for reproduction, and should be accompanied by smooth prints on P. O. P., or developing-paper having the same gradations and detail. All prints should be mounted on stiff boards.

3. *Unsuccessful prints will be returned only when return-postage at the rate of one cent for each two ounces or fraction is sent with the data.*

4. *Each print entered must bear the maker's name and address, the title of the picture and name and month of competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. However, this does not prevent the photographer from disposing of other prints from such negatives after he shall have received official recognition.

6. Competitors are requested not to send prints whose mounts exceed about 11 x 14 inches, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind—or with thin wood-veneer.* Large packages may be sent by express.

7. Competitors who have won three first prizes within a twelve-month, become ineligible for two years thereafter. The too frequent capture of the first prize by one and the same competitor tends to discourage other participants and to make the competitions appear one-sided and monotonous.

Awards—Rainy-Day Competition
Closed April 30, 1919

First Prize: None awarded.
Second Prize: Peter W. Saul.
Third Prize: P. Botel.

Honorable Mention: Ralph H. Blohm; E. J. Brown; Dr. A. H. Cordier; John Dove; W. E. Fowler; George W. French; J. E. Gatchell; Agnes E. Goodbody; J. Kirkland Hodges; E. J. Koester; M. H. Metcalf; Dr. Chas. B. Piper; J. V. Souder.

Subjects for Competition—1919

"The Spirit of Spring." Closes June 30.
"Rural Scenes." Closes July 31.
"Shore-Scenes." Closes August 31.
"Outdoor-Genres." Closes September 30.
"Architectural Subjects." Closes October 31.
"Domestic Pets." Closes November 30.
"Indoor-Genres." Closes December 31.

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"The Spirit of Christmas." Closes January 31.
"Still Life." Closes February 28.
"The Spirit of Winter." Closes March 31.
"Rainy-Day Pictures." Closes April 30.
"Miscellaneous." Closes May 31.

Photo-Era Prize-Cup

IN deference to the wishes of prize-winners, the Publisher will give them the choice of photographic supplies to the full amount of the First Prize ($10.00), or a solid silver cup, of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

Non-Receipt of Photo-Era.

IT should be unnecessary to remind subscribers of PHOTO-ERA that its Publisher is doing his very best to overcome conditions brought on by the war. Nevertheless, there are some who have held us to task for the non-receipt of PHOTO-ERA. Subscribers who fail to receive their copies—*after liberal allowance for mail-congestion*—should write us and we will see to it that a duplicate copy is mailed.

MISTY WEATHER PETER W. SAUL

SECOND PRIZE — RAINY-DAY PICTURES

Minor Repairs to Apparatus

In the preservation of photographic apparatus in a satisfactory working-condition, many little repairs can be done by anyone with no more than the average degree of handiness, and the delay involved in sending the apparatus away for repair thus avoided. As many of us well know, it is not the time actually taken by the professional repairer which deprives one of one's apparatus for so long a period, but the time which elapses before a particular piece of work can be taken up in its proper place among other waiting orders. Therefore, we may usefully refer to some of the more ordinary defects to be found in cameras and other commonly used apparatus and give some indications of simple means of repair.

If the camera has experienced a good deal of use in damp weather out of doors, and has not always been thoroughly dried after use, there is a tendency for the screws in its mahogany body to become loose or even fall out, a state of things which is the more likely to occur if the wood used in the first instance has not been fully seasoned. If it is a case simply of a few loose screws due to wear, it is quite an easy matter to plug the holes and thus obtain a firm hold for the screw. The best way to do this is to get a few odd pieces of cigar-box wood and, taking a small piece slightly larger than the whole diameter of the head of the screw, to whittle it down so that it will just fit tightly into the hole, the piece being given a slight taper. It is worth while to take a little care in order to get a good fit. The wood is then coated lightly with seccotine or ordinary glue and gently hammered into the hole as far as it will go. All the holes that need treatment in this way should be attended to and the camera put aside for the adhesive to harden thoroughly before the projecting ends of the inserted wood-slips are cut off and the screws re-inserted. This is a far better plan than to make shift with a larger screw, even when that is possible, which is not always the case, owing to the small aperture of any little brasswork-fitting which is secured by the screw. We have even cured the

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same trouble that occurs in the case of a blunt-ended screw, having worn a thread on a small all-metal camera by cementing it in with fish-glue. On a field-camera there is sometimes a tendency for the nuts and thread which hold the strut carrying the front and the reversing-back to suffer wear at the point where strength is most required, that is, between the shoulder and the nut and the strut of the camera. A couple of brass or copper washers or burrs, such as are used when riveting, if placed between the nut and the strut, will help to give a firmer grip unless the wear is very bad. In renewing worn brass-screws, a word of caution may be given. On no account should the screws be replaced by those of steel, or there is certain to be the occasion to regret this trifling and false economy. We remember once fastening a lens-flange to its panel with steel-screws. In the course of time, during much outdoor use, the screws rusted in so firmly that, when it was wished to sell the lens, it was impossible to get the flange off without a certain damage to the lens-panel.

Most probably any camera which had any long usage will require some repair-work to the bellows. Pin-holes are best mended by sticking a piece of cloth, or, better still, thin leather over the part. Black cloth, of course, is the most suitable, and an odd piece bought from a dealer in book-binders' requisites will serve for a good many purposes. While this repair is in hand, the bellows should be examined carefully with a view to discover any worn places which may come to be a source of leakage without being suspected. If the bellows are very old, it is most probable that they will sag in the center, especially if of any considerable length. It is not at all a difficult matter to make such serviceable for a considerably further period. Let the camera be racked out to its full extension and the bellows given a coating, inside, of very thin, liquid glue. Great care should be taken to brush the liquid well into the folds, but it should not be applied too thickly or it will be a very long time in drying. Some people apply the glue also to the outside folds of the bellows, but it is susceptible to damp, and it is better to use copal varnish for the outside. The varnish can, indeed, be used for the inside, though not quite so good a stiffener. A few days at least should be given, with the camera fully extended, for the stiffening-coating to dry. It may soon seem dry enough, but is apt to cause sticking of the folds when the camera is closed, unless given the opportunity to become thoroughly hard. The inside should, of course, receive a fresh coat of dead black.

The amateur repairer is not recommended to undertake any work on shutters, at any rate, those of the between-lens type. To do so usually means more work for the professional repairer. The rubber bulb of the release can be easily tested for tightness by squeezing it under water and any part which shows leakage can be patched like a cycle-tube.

The woodwork of the camera should have a careful polishing with a good furniture-polish, care being taken to avoid touching the lacquered brass fittings with the polish. Some brands of polish which we have used will remove lacquer. If only field and studio cameras were renovated regularly by the photographer as if they were valuable furniture, there would be fewer complaints of their failure to withstand any wear. Some of the apparatus that we have seen has been in a disgraceful condition, woodwork dull and lacking in polish, even clammy with overmuch handling. No wood is like mahogany for showing every mark upon its surface; but a good occasional polishing and a frequent rub over with a dry, soft cloth and chamois-leather will do much to keep its good appearance and condition.

Plateholders which are not perfectly light-proof are a source of constant apprehension to their user. We are all of us familiar with the operator who needs to hold his plateholder rolled up in the focusing-cloth until the very last moment, and even while inserting it into its groove feels the necessity of carrying out manipulative feats in order to prevent possible admission of light. The most likely source of leakage is the division between the two halves of the holder, due to shrinkage of the wood through rapid drying after exposure to a damp atmosphere. A way to remedy matters in this respect is to cement a layer of fairly thick black velvet along the edge of the holder around all four sides. This will make the catches hold more tightly as well as provide a trap for any entrance of light. We have several times repaired book-form holders in this way, and have had no trouble from leakage of light afterwards. If the hinged flaps on the shutters are worn, they may be renewed with small strips of leather cloth or book-binders' cloth cemented over the previous one. It may not sound like a good plan, but we have used it many times. Usually, there is ample room in the cut-off of the holder for the very little extra thickness which the leather-cloth represents.

The British Journal.

The Springtime of Love

Suggested by P. Botel's picture, "Spirit of Spring," in May PHOTO-ERA.

Within these lines I bid you find
  A story sweet, yet old,
That loses naught of fragrance,
  Though often it be told.

It's told beside the cottage-hearth,
  Within palatial hall,
Beneath the starlit canopy,
  Where the dew and moonbeams fall.

To some it's told so early,
  To some it's told so late,
To some it's never told at all
  For they have missed their mate.

God pity those who never hear
  The story of love so sweet;
That takes us to the realm of bliss
  Where soul with soul doth meet.

SARAH ESTELA SHAW.

Solutions

WHEN a solution is made up in accordance with the formula given with the plates or paper, the formula itself should be cut out and neatly pasted on the bottle, states Mr. M. Owen in the *Amateur Photographer*. It not only serves as a label, but when a further supply has to be mixed up, there is no trouble to find the details of the ingredients and quantities. They are all stated on the bottle for reference.

As a good many of the solutions used do not keep very well, the date should also be written on the label. We can then see at a glance how stale the mixture is, and also get a good idea as to the length of time which it will keep in good working-order. As a general rule, it is best not to make up large quantities of any of the usual photographic solutions, unless it is one which is known not to deteriorate quickly.

EVENING AFTER THE SHOWER — P. BOTEL

THIRD PRIZE — RAINY-DAY PICTURES

Tarnished Lenses

We receive many inquiries with regard to lenses that have become oxidized or otherwise show the effects of exposure to the weather. In a recent editorial *The Amateur Photographer* offers some valuable suggestions. The question usually asked is where such instruments can be repolished. The answer is that repolishing can only be undertaken economically by the actual maker of the lens. He alone has the tools and gauges necessary for working to the curves of that particular instrument: and any other lens-maker would have to incur expense out of all proportion to the result before he could attempt the task. Moreover, he would be more than human if he were willing to disorganize works designed for quantity-production in order to put a competitor's product in working-order again. There is another reason why he should not do so. When a lens has deteriorated in this way it is a sign that the glass will not stand exposure to the air, and repolishing is at once only a temporary remedy. Some of the earlier German anastigmats were made with glass which, it was subsequently found, was speedily attacked by the air: and they had to be redesigned so as to dispense with such material, or else to bring it into such a position that it was protected on both sides by other glasses to which it was cemented with balsam. Such lenses naturally found their way on to the second-hand market very quickly: and buyers will do well to make certain before purchase that the exposed surfaces of the glass show no signs of such attack. There should be nothing on the glass which will not yield to a gentle wipe with a soft cloth moistened with methylated spirit, which should leave the lens with that fine black surface which indicates a perfect polish. It should be remembered also that the effect of the tarnish is not to impair definition, at any rate in its earlier stages; but manifests itself as a general haze or fog over the whole image. To test the quality of a lens requires more than a mere superficial examination, and more than a single exposure on some haphazard subject.

A Couponless Short-Term Bond

"Jack, I'm going to tear up those new photographs of mine; they look ten years older than I do."

"Nonsense! Put them away until you catch up with them."—*Exchange.*

XUM

SUBJECT FOR NEXT COMPETITION

ADVANCED WORKERS

FUN IN THE SURF — W. C. SAWYER

Advanced Competition—Shore-Scenes
Closes August 31, 1919

PERHAPS no competition is more popular among amateur and professional photographers than the one devoted to shore-scenes. It makes no difference whether it is the beach of a mighty ocean, the banks of a majestic river or the shore of a placid lake—one and all may yield suitable material for this competition. Obviously, animal- or bird-life along the shore should be made to supply many excellent subjects of technical value and pictorial beauty, provided that the setting is convincingly a shore-scene. Human activities along the water-front are filled with possibilities for exceptional outdoor genres and real heart-interest pictures. Pictorially, this competition offers unlimited opportunities to the camerist who delights in soft effects caused by rain, mist or fog. In short, if last year's Shore-Scenes Competition is any criterion, the present one is destined to afford even greater delight to all concerned. I am sure that contestants, judges, subscribers and readers of PHOTO-ERA thoroughly enjoyed the competition of a year ago and I am convinced that there will be even more technical and artistic benefit derived from the competition of 1919.

There is something fascinating about the shore of any body of water. To the eye that is trained to see beauty, a clump of weeds along the bank of a mud-hole may present a theme of rare charm. I remember well the hours that I have wandered along the shores of ponds, lakes and streams. Often, I have devoted days to long walks along the shores of the Atlantic—sometimes, over miles of sand and, sometimes, over cliffs and rocks, but *always* with that indescribable power of fascination that beckoned me on, long after my feet had cried, "enough!" I mention these incidents so that those who aspire to win honors in this competition may know that I am fully aware of the difficulties and likewise know the satisfaction that comes with success. It is human nature to value the things that are the hardest to obtain.

Few readers of PHOTO-ERA will ever forget the wonderful effects that Mr. H. C. Mann has obtained with his camera along the Atlantic coast. His pictures have appeared in many of the leading periodicals of the world and many of them were published first in PHOTO-ERA. I mention Mr. Mann, because he has done what few photographers have done well, and that is to portray clouds in all sorts of weather and as they really appear over the coast. The camerist who en-

joys cloud-photography can satisfy himself to the utmost along the shores of ocean, lake or stream. This is particularly true if he is fortunate to be near a large body of water that gives him an unrestricted view of the horizon-line. No phenomenon of nature is more spectacular or more beautiful than massed cloud-formations over water. Needless to say, the camerist who hopes to obtain results must be as good a meteorologist as he is a photographer in order to portray clouds true to nature. This branch of photography is eminently worth the best effort; and, when a magnificent result is obtained, the camerist may rejoice with the fisherman who cried exultingly, "I've got something!"

There is all manner of plant- and animal-life along the shore and the wide-awake camerist should tax his ingenuity to the utmost to portray it. The birds—particularly waterfowl—should be a sufficient incentive. A few days ago, I watched a very interesting and artistic motion-picture description of American waterfowl, and in no case did I see a picture that could not have been obtained by a camerist with the requisite energy and technical ability. Granted that such pictures are difficult to make; but if my readers could have witnessed the motion-picture camera-man's pictorial description of sea-gulls in flight, I am sure that they, too, would appreciate the magnificent opportunity that is open to them, whether along the coast or near inland bodies of water.

There is always something uncanny about fog, mist or rain on or near water. An imaginative person can conjure weird and fantastic shapes in the eddying fog, and it is the imaginative camerist who often makes the most successful portrayal of inclement weather-conditions along the coast or along the shores of lakes and rivers. The work of Bertrand H. Wentworth of Gardiner, Maine, is conspicuous for its remarkable fidelity to actual conditions along the rock-bound coast of this state. I have in mind a picture of his which depicts ragged ledges and jagged rocks in the immediate foreground. Beyond, are the whitecapped breakers throwing themselves in violent hate against "the teeth of the shore." Over all lies a fog, blown in from the open sea, that is clammy and chills one to the bone. The picture tells this and more because it was made by a master of his subject. Those who would attempt photography in the fog will do well to read the excellent article, "Fog-Photography," by Beatrice B. Bell, in this issue. No matter where the camerist may be situated, as long as he is within reach of a sufficiently large body of water, he may strive to obtain effects that may be made into masterpieces.

The most accessible and easiest subjects are to be found along any of our large beaches. Here may be found, literally, thousands of opportunities. Unfortunately, the abundance of material is rather tantalizing. It makes one think of the man who could not see the woods because there were so many trees in the way! However, the ingenious camerist will find a way to isolate his subject from the surroundings long enough to snap the shutter. Care should be taken to distinguish carefully between what constitutes merely a record-picture and one that has pictorial value. An attractive young lady in a bathing-suit is not necessarily a good subject for this competition. Unless she is properly placed in the picture-space and is not posing, there is small chance at the hands of the jury; and even then, unless her presence tells a convincing story, she is still but a record for the vacationist to enjoy of a winter-evening.

No competition devoted to shore-scenes would be complete without the portrayal of the activities of fishermen and others who make a living on or near the water. Many a delightful genre may be obtained in and around the fish-piers and huts of the fishermen. Usually, there is "an old salt" who is hale and hearty and delighted to lend his weather-beaten personality to the pictorial requirements of the camerist. The coming and going of the fishing-fleet offers innumerable possibilities to depict pathos or joy. The tremendous power of human interest can be utilized to marked advantage. The camerist should not forget the clam-diggers, oystermen and beach-combers; nor should he neglect the brave men who patrol the coast and man the life-boats in times of storm and shipwreck.

The renewed activities in American shipyards may be made to supply additional material. I do not refer to the large shipyards where monster battleships are being constructed, but to the smaller yards where two- or three-masted schooners are on the ways and the yard is so situated as to leave no doubt of its being the shore of some bay or inlet. Here again, the opportunity for interesting genres is exceptionally good. Moreover, those camerists who love the uncanny should try to depict the ribs of some vessel by moonlight or at sundown, when the result should be made to suggest the bones of some giant reptilian monster.

Perhaps, the weirdest subject of all is a shipwreck at sunrise, sunset or by moonlight. There is a peculiar and inexplicable fascination that hovers about a wreck at any time, and this powerful influence is increased tremendously the moment the light of day is weak or absent altogether. Then it is, that the waves take on a hungry look as if they had been cheated of their prey, and dark and awesome shadows creep nearer and nearer. It requires but little imagination to picture a blinding storm, breakers ahead, a rending crash, cries of despair and the silence of death, broken only by the roar of the elements.

The intelligent camerist will discover many other interesting and artistic subjects. It is for him to utilize every opportunity and by so doing he will obtain results that will be a credit to himself and a pleasure to all picture-lovers who read and enjoy PHOTO-ERA. However, the real incentive in this and all competitions should be self-improvement; and, as the camerist advances, he may rest assured that his progress will become a source of pleasure to everyone who loves photography.

A. H. B.

Why Prints are Not Returned

PHOTO-ERA has a large collection of prints that are waiting to be returned to their owners. The reasons for this sad state of affairs are as follows:

First, absence of name and address on the prints of sender.

Second, failure of senders to provide any or sufficient postage for their return.

Third, failure to indicate why they were sent, or, rather, no advice has been received by PHOTO-ERA.

Fourth, prints that receive Honorable Mention remain the property of PHOTO-ERA, according to the rules which are stated plainly in every issue, together with conditions under which they may be returned to senders.

If this meets the eye of those who are in the dark regarding the fate of their prints, will they kindly communicate with the Publisher, and they shall be enlightened promptly.

XUM

BEGINNERS' COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA, Beginners' Competition
367 Boylston Street, Boston, Mass., U. S. A.

Prizes

First Prize: Value, $2.50.
Second Prize: Value, $1.50.

Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Certificates of award, printed on parchment-paper, signed by the Publisher, and suitable for framing, will be sent on request, and free of charge, to winners of prizes or Honorable Mention.

Subject for each contest is ***"Miscellaneous"***; but original themes are preferred.

Prizes, chosen by the winner, will be awarded in photographic materials, sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books.

Rules

1. This competition is open only to beginners of not more than ***two*** years' practical camera-activity, and whose work submitted here, is ***without any practical help from friend or professional expert.*** A signed statement to this effect should accompany the data.

2. Workers are eligible so long as they have not won a first prize in this competition. Winners of the first prize automatically drop out permanently, but may enter prints in the Advanced Class at any time.

3. Prints eligible are contact-prints from 2¼ x 3¼ to and including 3¼ x 5½ inches, and enlargements up to and including 8 x 10 inches.

4. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be tastefully mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Prints on rough or linen-finish surface paper are not suitable for reproduction, and should be accompanied by smooth prints on P.O.P., or developing-paper having the same gradations and detail.

5. *Unsuccessful prints will be returned only when return-postage at the rate of one cent for each two ounces or fraction is sent with the data.* ***Criticism on request.***

6. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. However, he may dispose of other prints from such negatives *after* he shall have received official recognition.

7. *Each print entered must bear the maker's name, address, instructions, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type, and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print for what contest it is intended.***

8. Competitors are requested not to send prints whose mounts exceed about 11 x 14 inches, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board—not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express.

Awards—Beginners' Competition
Closed April 30, 1919

First Prize: R. L. Cline.
Second Prize: Henry A. Pratt.
Honorable Mention: Chas. W. Russell; Joseph B. Morse, Jr.

On Manipulating a Camera

THE instruction-books that accompany most cameras are very explicit and of first importance to every beginner. If the advice that is contained in the instruction-book were followed, as it should be, there would be far less photographic unhappiness. I do not doubt that the average beginner reads his instruction-book seriously and with every intention in the world to practice the rules laid down for his guidance—but! It is not my wish to censure, but to awaken the beginner to the advantages of manipulating his camera with credit to himself and to photography. Moreover, it is not my intention to make these few paragraphs take the place of an instruction-book. What I do intend to do is to call the beginner's attention to a few pitfalls that may be avoided easily if he will employ good sense and exercise patience.

From actual experience, behind the counter, I know of many cameras that have been ruined permanently by beginners who would not stop to learn how to open and close a camera properly. If for any reason the front did not open quickly, such beginners would pry open the front with a knife or screw-driver. In most cases this procedure resulted in bending the camera-front out of alignment so that even the manufacturer could not repair it. Again, I have seen beginners close—or attempt to close—a camera without first making sure that the camera-front was pushed home as far as it would go into the camera-box, with the result that the front that held the lens and shutter would be bent, and the bellows so strained that it would leak light. In both cases the difficulty was due to impatience, irritation or the lack of the sense of the fitness of things mechanically. Modern cameras of the better types are wonderful examples of the camera-maker's art and they should be handled with care and judgment. If used properly, they seldom get out of order; but if they are mistreated, it requires but little to put them out of commission, temporarily or permanently.

Another source of photographic unhappiness for the beginner is carelessness in filling the camera with a roll-film or plateholder. Here, too, impatience or a quick forcing will cause the film or plate to become out of register, and sharp pictures will be out of the question. Often such procedure may split or bend the camera-body in a manner that virtually necessitates the purchase of a new camera. Some beginners cannot seem to realize how little is required in the way of abuse to throw the delicate adjustments of a camera out of order. To make matters worse, these beginners write long letters to dealers and to manufacturers condemning an equipment as faulty in manufacture. It has been my experience that most camera-manufact-

FIRST PRIZE
BEGINNERS' COMPETITION

THE OLD MILL — R. L. CLINE

urers are only too glad to make amends for faults that are due to poor workmanship or oversight.

Many a good lens- or shutter-equipment has been destroyed by an inquisitive beginner—by that I mean that a beginner has attempted to clean a lens or repair a shutter without having the least idea what he was undertaking. A lens is to a camera what the eye is to a human being. We all know what discomfort and pain a cinder in the eye may cause. A scratch on the highly polished surface of a lens may not cause physical pain, but it may spell the ruin of an expensive lens. To remove such a scratch is a very delicate and costly undertaking that only the maker of the lens should attempt; for he alone has the necessary tools with which to grind and polish. Although some beginners are mechanically inclined and might be able to make minor repairs on a shutter, yet, my advice would be to let the shutter alone and to send it to the manufacturer or to a competent repairer. These statements may appear to be self-evident; but experience shows that every year beginners join the ranks of amateur photographers and do not seem to realize the importance of doing things right.

It is not my purpose to "preach," and I know that advice is not always welcome. Nevertheless, I feel that the average beginner intends to make good and that he does not intentionally wish to stand in his own way. For this reason I am sure that the few hints given will not fall on barren soil. The point is that it is distinctly to the beginner's own advantage and pleasure to make every step in photography count. Photography contains too much practical and instructive material to be treated lightly. In most human undertakings it is the man who works hard and plays hard that wins out. There is but one way to manipulate a camera and that is the right way! When any part of a camera fails to function properly, investigate the difficulty slowly and methodically. If the trouble is of a nature beyond the knowledge of the beginner, he should devote his energies to find the person or manufacturer best fitted to remedy the difficulty. Then he should allow ample time for the repair to be made thoroughly and accurately. However, let him remember that if he does his part right in the first place, there will be little need of the repair-man. By learning to manipulate his camera correctly, the beginner will obviate eighty per cent of his photographic difficulties.

A. H. B.

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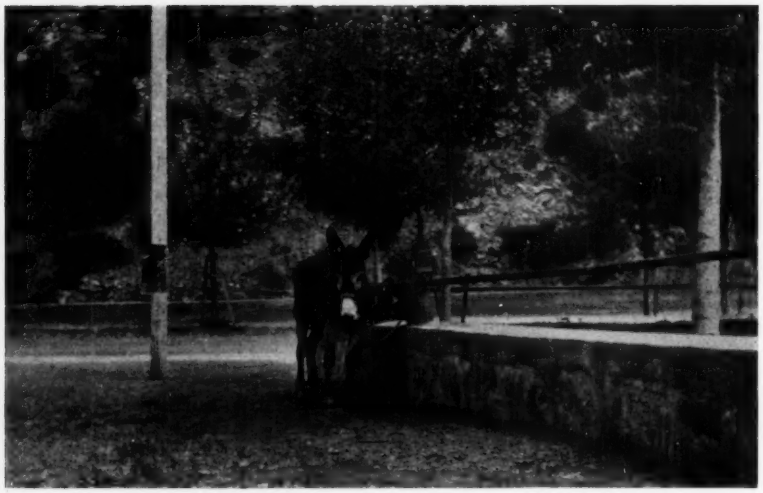


JACK — HENRY A. PRATT

SECOND PRIZE — BEGINNERS' COMPETITION

Photographing Around the Corner

WITH the removal of all war-restrictions on the use of the camera out of doors the minor troubles of the street-worker—that ubiquitous "interested spectator"—may be expected to be well to the fore, writes J. R. Bainbridge, in *The Amateur Photographer*.

Alone, he is a nuisance, equaled only by the man who offers advice, but when reinforced by his equally idle companions the result is much waste of plates, time and temper.

The small accessory herein described is a very good means to outwit the crowd, besides being useful in several other ways.

It consists, essentially, of a mirror fixed at 45°, or thereabouts, to the "line of fire," the image registered on the plate being that of the view at right angles to the direction in which the camera is pointed. The above nuisance, being unaware of this, is eliminated, while the figures in the view photographed are behaving in a normal manner.

The construction, not a difficult matter, is as follows:

A short cardboard tube lined with velvet to grip the lens-mount firmly, is fixed into a thin, hard-wood square base, which has a circular hole cut centrally to accommodate the cardboard tube.

The "window" is fixed by means of two small tongues at right angles at one edge of the baseboard; and a piece of the thinnest possible silvered glass, free of irregularities and scratches (I use a piece of an old pocket shaving-mirror), is fixed into two shallow grooves and fits across at 45°. The whole is glued into place.

Triangular pieces of thin cardboard are glued at the sides to prevent any light from getting in except by the window. These pieces of cardboard also help to bind the apparatus together. The edges also might be bound neatly with *passe partout* binding glued on if desired.

The interior should be blackened, except the mirror.

In use, the mirror box is slipped on to the lens and the focusing, etc., done in the ordinary way.

On a hand-camera, the viewfinder will need to be turned at right angles to the direction in which the lens is pointed, when again the arrangement of the pictures is exactly as in normal procedure.

The mirror is also very useful for working in a cramped position, where the camera cannot be manipulated in the ordinary way on account of some intervening object. Then, again, views either vertically "up" or down can be made without any elaborate preparations.

When working at home or indoors, a large plain mirror can often be purloined temporarily, and if all direct light other than from the object photographed be carefully screened off, its intelligent use will make pictures possible when otherwise no suitable position can be found for the camera.

The Twinkling of an Eye

DESPITE the marvelous development of photography, the working-photographer seldom pauses to think of one of the marvels of his process, namely, the incalculable speed with which light-action can affect the plate. This fact was strikingly brought out according to *The Amateur Photographer* in Sir J. J. Thomson's recent evening lecture at the Royal institution, when he had occasion to show some results of a photographic method applied to the measurement of electrical phenomena. He said that it had been a source of wonder to him to find what very intense effects were possible on photographic plates in the most fleeting exposure. In this particular instance the exposure could not have been more than a 100,000th part of a second; yet there, indubitably, was the effect, repeated again and again in order to plot a curve. The veteran scientist suggested the use of the photographic plate along with what is known as pezo-electricity to the investigation of the phenomena of explosions.

THE CRUCIBLE

A MONTHLY DIGEST OF PHOTO-TECHNICAL FACTS

Edited by A. H. BEARDSLEY

Printing-Out Paper

VERY few professional photographers use printing-out paper for their finished prints, and most of them confine its use to the making of rough proofs. Even the dealer who has a photo-finishing department prefers to use gaslight-paper, owing to the rapidity with which large numbers of prints can be produced; but most workers are occasionally called upon to make prints on printing-out paper for reproductions for commercial purposes.

Cleanliness and a correctly compounded toning-bath are essentials to success, and the toning-table given below may be useful to keep for reference. Two solutions, both of which keep well, are made up in such a way that, by taking equal parts of each and adding water as directed, we have a bath in the proportion of ten grains of ammonium sulphocyanide to one grain of gold. Upon the preliminaries to toning we need not dwell, except to emphasize the necessity of very thorough washing before toning, and to use always a freshly prepared fixing-bath of plain hypo, not stronger than two ounces to the pint of water. Washing after fixing should be thorough, but not prolonged.

No. of Prints.			Water.	Ammonium Sulphocyanide 150 grs. in 15 ozs. Water.	Gold Chloride 15 grains in 15 ozs. Water.
3¼ x 4¼	4¼ x 6½	6½ x 8½			
4	2	1	1 oz.	1 drm.	1 drm.
8	4	2	2 "	2 "	2 "
12	6	3	3 "	3 "	3 "
16	8	4	4 "	4 "	4 "
20	10	5	5 "	5 "	5 "
24	12	6	6 "	6 "	6 "
28	14	7	7 "	7 "	7 "
32	16	8	8 "	8 "	8 "
36	18	9	9 "	9 "	9 "
40	20	10	10 "	10 "	10 "
44	22	11	11 "	11 "	11 "
48	24	12	12 "	12 "	12 "
64	32	16	16 "	16 "	16 "

The simple rule to observe in compounding a toning-bath:

Equal parts of each solution are taken, and for as many drachms of *one* of them, the same number of ounces of water must be added.—*Rajar, Limited.*

It should be understood that the above remarks apply to Rajar printing-out papers or to papers of similar manufacture.

A Remarkable Case of Reversal

IN a recent issue of *The British Journal*, Mr. W. Binns writes of an unusual experience when developing a batch of eighty dozen 3¼ x 5½ plates—all of outdoor subjects. According to Mr. Binns, the plates in question were subjected to the same developer in regulation tanks made to hold ten dozen plates. At the expiration of the allotted time for development, all the plates except twenty-five turned out well. With regard to the twenty-five, these proved to be *positives* instead of negatives. These plates were slightly fogged but they would have made fair prints had they been negatives instead of positives. Quite naturally, Mr. Binns is interested to find an explanation. He adds that in a subsequent batch of eighty dozen plates, two dozen were positives, and the rest good negatives. Since these plates were developed identically it is unaccountable why some should be positives and others negatives. In fact, one plate that contained two different exposures was half positive and half negative. If any reader of PHOTO-ERA can offer an explanation, we should be pleased to hear from him. Possibly, there are some commercial photo-finishers who handle large batches of plates or films who could offer an interesting and instructive solution of this photographic enigma.

To this problem is added the experience of the practiced worker, Mr. E. A. Maitland, in the form of an old negative, which shows a negative at one end, which latter merges into a positive at the other. The cause of this reversal was found to be light-leakage in the plateholder.

Another form of quasi-reversal is occasionally met where the shadow-detail of the negative portion appears bleached, as it were, and makes a partial positive, unmistakably different from that caused by the action of light. This occurs only when the developer is of the metol-hydroquinone type and lacks sulphite, the presence of quinone in the developer presumably being the inciting cause in such instances.

Detection of Flaws in Metal

ACCORDING to a recent editorial in *The Amateur Photographer* a new phase of photographic application was disclosed at the combined meeting of the Faraday and Röntgen Societies the other evening in Burlington House. Most people have thought of X-ray photographs only as showing them what is inside their own body; but the resolute investigators have turned their attention to other materials than human flesh and bone, with results which are likely to have an important effect upon industry in the future. For example, one of the speakers showed that hair-cracks in steel may be detected by means of the X-ray photograph—flaws of only perhaps as much as 1,000th part of an inch in diameter. In connection with the war, large numbers of cast aluminium-cylinders have been examined, and the interior defects have been perfectly visible in the photographs. In one photograph, for instance, the presence of blow-holes was revealed very clearly, especially when contrasted with other photographs, which showed only the solid casting. Perhaps the most remarkable of all these investigations, or at least the one of most evident utility to the ordinary mind, is the application of X-ray photography to the detection of faults in timber-constructions. This has been the work of Major Kaye and Dr. Robert Knox, and its importance can be estimated when one remembers how much depends upon perfect timbering in, say, the strut or wing of an airplane, where a hidden fault may cost the life of one or more brave men.

XUM

OUR CONTRIBUTING CRITICS

YOUR CRITICISM IS INVITED

Whoever sends the best criticism (not over 150 words) before the twentieth of the current month, will receive from us a six-month subscription to PHOTO-ERA MAGAZINE.

The winning criticism, in our opinion, is the first one printed below.

THE fundamental fault with this print—and to which most of the others are due—is that it violates the two basic principles of composition, unity and simplicity. By dividing the print two inches from the left side—between the two boats—two excellent pictures result; but when they are both combined into one print, as in the present instance, the picture loses all "punch" as there is a theme of double interest exhibited. There is too much foreground, and extended view on the right. The slanting skyline is unfortunate. The figure X formed in the foreground by the line starting about an inch from the bottom on the right side and running diagonally across the picture, and the formations in the sand running from left to right, is an unsatisfactory figure to introduce into a picture and it also blocks the eye from easily entering the print. The entire print is a little too dull and monotonous.

C. B. WEED.

THERE is good material here to make a very pleasing picture. The tone generally is good and conveys a very delightful feeling of half light. A quarter of an inch off the bottom and an inch from the right would make the print pull together better. Also a better feeling of the bigness and space of outdoors would be conveyed if the mast did not run out of the top of the picture—slightly more space would help. The hull of the boat is lost and should be made darker, this would also help the depth of the print. The barge could be more advantageously placed half an inch to the right of its present position and slightly more in the foregound, coming away from the strip of land in the distance. A distinct improvement would be to put some tiny catches of light on the edge of the cloud which runs from the lower left to the upper right—this would carry out the zig-zag line and, in conjunction with the darkened spots of the boat and barge, give the necessary accents to the picture.

DONALD MACKENDRIE.

A PROLONGED study of this picture fails to find any object of particular interest. The dark mass in center is too indistinct to be identified and the boat may be in a dark shadow on the water or grounded in the mud. The two small spots in lower left resemble blots of ink. A slight increase in contrast would improve the general result somewhat; but the view includes too much. Choosing a nearer viewpoint, including a part of the boat outlined against the sky and possibly showing a slight reflection in the foreground, would have made a much more interesting subject.

EMMETT L. MILLER.

THE picture, which, it is assumed, represents an evening-scene, has commendable qualities. Its maker has eminently tried to express the sentiments of repose, solitude and rest; and his purpose is accomplished by the parallelism of horizontal lines reaching well across the picture and also by the low key which is used throughout. The presence of the vessel at anchor is fortunate, the vertical lines of the masts preventing the repetition of horizontals from becoming tiresome.

THE PICTURE CRITICIZED THIS MONTH

They serve also as a link which draws the dark cloud-bank into the picture. The tonal quality is good. The presence of the loaded barge, almost in the middle of the picture space, is unfortunate and disquieting to the eye. The writer suggests trimming quarter of an inch from the bottom and from the right side.

FRED C. GENSCHER.

THE most obvious characteristics of this print are its underexposure and distractions. There are, undoubtedly, pictorial possibilities in some variety in the locality, especially while the ship is available; but too much view is attempted here, resulting in disordered arrangement of light and shadow masses, particularly the sky and patches of water. It seems, therefore, hardly profitable to suggest any trimming in the picture as shown. But the subject and surroundings are surely worthy of further effort from a different viewpoint or points, which should include less on the ground-glass.

LYNDSEY BOURKE.

IN reference to the picture this month to be criticized, I would think that the negative had been underexposed and underdeveloped. Then again the scow or barge to the right of the ship could have been left out, with benefit to the picture. The easiest way to save a lot of work on this picture would be to make a second exposure and choose a better time and location. If this is not possible I would make a panel-picture by trimming one inch and one-eighth from the bottom, which would eliminate the unnecessary foreground, block out the barge which would make the ship the principal object. Then print on contrast paper which would give a snappier print.

C. H. PUDDIFOOT.

Copy, Duplicate, Replica

A *copy* is as nearly like the original as the copyist has power to make it; a *duplicate* is exactly like the original; a carbon *copy* of a typewritten document must be a *duplicate;* we may have an inaccurate *copy,* but never an inaccurate *duplicate.* A *facsimile* is like the original in appearance; a *duplicate* is the same as the original in substance and effect; a *facsimile* of the Declaration of Independence is not a *duplicate.* A *facsimile* of a key might be quite useless; a *duplicate* will open the lock. An *imitation* is always thought of as inferior to the original; as, an *imitation* of Milton. A *replica* is a *copy* of a work of art by the maker of the original. A *duplicate* is really an original, containing the same provisions and signed by the same persons, so that it may have in all respects the same force and effect. A *copy* is a *reproduction* of an original, or even of a reproduction of an original, but not necessarily of the same size nor retaining all the good or bad qualities of the object copied. Thus, there are good, bad and indifferent *copies* of the Venus de Milo, in bronze, marble and alabaster, the original being of marble. There are also *copies* of photographs, ranging in quality according to the skill of the copyist, and may be printed in any size or in any medium. A *reproduction* is the same as a *copy,* and may be executed in the form of a photograph, photogravure or halftone.

W. A. F.

Change of Address

SUBSCRIBERS who desire to change their addresses are requested to inform us not later than the 5th of the previous month, as the envelopes must be addressed and classified for mailing on the 10th.

Failure to do this puts it up to the subscriber to procure his copy from his former post-office address, and no duplicate copy can be expected from the Publisher of PHOTO-ERA.

We beg to invite the attention of workers to the rules governing the Advanced and Beginners' Competitions in order to facilitate a fair, intelligent and prompt decision on the part of the judges.

XUM

OUR ILLUSTRATIONS

WILFRED A. FRENCH

THE work of Allen E. Churchill is well known to readers of PHOTO-ERA. One of his best marine-subjects adorns the cover of this issue and it cannot fail to impress the beholder with its tropical serenity and *dolce far niente* suggestion. The tinkling of a mandolin is all that is needed to make this idyl complete. It was evidently made from a height, and affords an admirable example of downward perspective. Data: Bermuda, February, 4 P.M.; bright sun, light very strong; 4 x 5 hand-camera; 6-inch Zeiss-Tessar; stop, F/16; about 1/40 second; Cramer Medium Iso (Backed); pyro-soda; Azo print.

Although the photographs that accompany the article by William Ludlum are not intended to represent him at his best as a picture-maker, they are of interest. Our readers will agree that the two illustrations are remarkable as explained in the text. The prints were made on soft Glossy Noko the guaranty of which expired August 1, 1916. A liberal use of bromide, a few test-strips and much patience yielded good results.

For some time, I have endeavored to persuade Herbert B. Turner to narrate his photographic experiences in Hawaii. PHOTO-ERA is pleased to be able to include this long-desired account with illustrations in this issue. Mr. Turner's selection of subjects exemplifies his sound artistic judgment, in that it portrays Hawaii to advantage. We behold a rice-field, a motor-road, mountain-ranges, a canyon and fishing-craft—brief but accurate glimpses of several important topographical features. Moreover, these illustrations display Mr. Turner's technical experience convincingly. He is a trained observer and expert photographer, and his successful camera-work in the Hawaiian Islands should lead others to visit this land of sunshine, flowers and impressive volcanic mountain-ranges. The data follow: "A Vista Near Honolulu"; page 8; Honolulu about twenty miles out; January, 11 A.M.; sunlight; 3¼ x 5½ Kodak Special; 6⅞-inch 2B Zeiss Tessar; stop, F/11; 1/25 second; Eastman film; pyro; Azo F print. "Japanese Girl"; page 9; Honolulu, February, 10 A.M.; hazy sun; other data same as above. "Mountain-Range"; page 11; Island of Oahu, April, 11.30 A.M.; sunlight; other data as above. "The Pali Range"; page 11; Island of Oahu, March, 3 P.M.; fair light; other data as above. "Olokele Canyon, Kauai"; page 12; Island of Kauai; January, 9.30 A.M.; sunlight; stop 4/9; 1/5 second; other data the same. "Motor-Road near Honolulu"; page 12; about sixteen miles from Honolulu, November, 11.30 A.M.; sunlight; stop 4/11; 1/25 second; other data the same. "Japanese Fishing-Craft"; page 14; Honolulu Harbor; December, 4 P.M.; good light; other data the same.

Perhaps, no time of the day offers better pictorial opportunities than the sunset-hour; especially, if clouds happen to be so arranged in the western sky that they present a spectacle of symmetry and beauty. Such effects are heightened when viewed across water or when the horizon-line is silhouetted against an expanse of sunset-glow. Mr. Fisher has been singularly successful in picturing an unusually difficult theme and deserves to be complimented for achieving so admirable a result. Although the foreground is exceedingly interesting, it seems that it could be abbreviated without detriment to the composition as a whole. Data: Boston Harbor, November; 4.30 P.M.; fair light; 5 x 7 Press Graflex; 7-inch Euryplan; stop, F/32; 1/75 second; Eastman film-pack; pyro; Professional Cyko.

Our readers will remember the beautifully illustrated article, "Alongshore with a Camera," by B. F. Langland, in August 1918 PHOTO-ERA. Moreover, they will recall other examples of Mr. Langland's pictorial skill as a marine-photographer. In his panoramic glimpse, "Detroit Harbor, Washington Island," presented on page 19, he displays rare artistic judgment in selecting the viewpoint. Data: September, 3 P.M.; light poor: raining; 3¼ x 5½ Premo Film-Plate; 6-inch Zeiss Kodak; stop F/6.3; 1/10 second; Eastman film-pack; Dianol; Cyko print.

With a few exceptions, most photographers confine their camera-activity to days when the weather-conditions are favorable. However, in the case of Beatrice B. Bell we have a pleasant surprise. In her "Fog-Photography," we learn of the perplexities and also of the rewards of photography under unfavorable conditions. We believe that the readers of PHOTO-ERA will enjoy this practical article with its delightfully suggestive pictures, and endeavor to profit by it. Data: Florida Pines; page 20; Florida, January, 7 A.M.; heavy fog; No. 4 Cartridge Kodak 4 x 5; rapid rectilinear; stop, U. S. 4; shortest bulb-exposure; Kodak film; pyro in Kodak developing-machine. The Troopers; page 21; Wisconsin, October, 6.30 A.M.; heavy fog; 4 x 5 Graflex; Zeiss-Kodak lens; stop, F/6.3; 1/5 second; Kodak film; pyro in Kodak developing-machine; 8 x 10 enlargement with Brownie Enlarger. The Watering-Place; page 21; other data same as preceding picture. Birches; page 22; Wisconsin, September, 7 A.M.; sun breaking through fog; 4 x 5 Graflex; Pinkham & Smith S. A. Doublet; stop, F/6; 1/10 second; Kodak Speed Film; pyro in Kodak developing-machine. Along the Lake-Shore; page 23; Minnesota, April, 8 A.M.; bright but foggy; 4 x 5 Graflex; Pinkham & Smith S. A. Doublet; stop, F/6; 1/10 second; Kodak Speed Film; pyro in Kodak developing-machine.

Happily, the ravages of the German U-boats are at an end and such submarines as frequent American waters fly the flag of the United States Navy. Through the courtesy of *Sea-Power* we reproduce a photograph of the latest type of American submarine. We are reliably informed that this new type is second to none in effectiveness. The atmospheric quality of the view is as unusual as it is pleasing.

The sea has a fascination that is irresistible to the nature-lover and particularly to the photographer. William Norrie of Scotland is a photographer who loves the sea and, because of this, he is able to portray its varying aspects with enthusiasm, power and beauty. In "Morning-Glory," Mr. Norrie has reproduced successfully in monochrome the glory of early morning with its flashes of light and shade across the waters, and the massing of clouds in the east. For data, the reader-camerist is referred to previous issues of the past eight years that contain many an exquisitely beautiful marine by this celebrated artist, who uses virtually one equipment, one method and one make of materials—with proper regard for accidents, and they happen sometimes to a surf-photographer of his daring.

An iceberg is a menace of the sea that cannot but arouse feelings of dread. The mind recalls that fatal night of April 14, 1912, when the proud "Titanic" crashed into a towering mass of ice and hundreds met their death. "The Dread of the North Atlantic" was photographed by William H. Pierce, of Boston, while on a scientific expedition to the Arctic which was fitted out by Mr. William Bradford, a distinguished American artist. The picture was made by the wet-collodion process invented by Le Gray; Voigtländer lens and home-made shutter.

In the illustrated prose-poem, "The Camerist," Frank King points a moral if he does not adorn a tale. To him, the "open road" with camera in hand represents health, happiness and an intimate understanding of human nature. Perhaps the illustration that heads the text conveys the idea that Mr. King had in mind; but, to me, it seems as if the very apparent pencil-work might have been omitted, as it tends to mar rather than to improve. Another exposure from a point more to the left, with a little less foreground, would have bettered the result. Data: Bellaire, Ohio, July, 2.30 P.M.; brilliant sun; No. 12 Premo; Bausch and Lomb Tessar; stop, F/4.5; 1/25 second; Eastman Speed Film; pyro in tank; enlargement on Royal Bromide Smooth. The sky and mountain were worked in with pencil.

Advanced Workers' Competition

DESPITE the effort to suggest new and interesting themes for the Rainy-Day Pictures Competition, the entries as a whole were disappointing. Whether the difficulty was due to the inability of contestants to obtain the results that they sought or whether it was a case of not having a camera at hand at the psychological moment, is the question. Or, again, it may have been due to a desire to avoid getting wet or risking damage to the photo-equipment. Whatever the reason, the competition failed to produce a really "wet" rainy-day picture that would meet first-prize requirements. For a well-executed, conventional rainy-day picture, Peter W. Saul deserves much praise, although it fails to impress the beholder with regard to the existing weather-conditions. The lady in the foreground carries her umbrella in a manner that suggests a foggy day rather than a day with the rain pelting down. However, Mr. Saul is to be commended for his sincerity of purpose. Data: April, about noon; weak light; 6½-inch Dynar; stop, F/8; 1/25 second; Eastman Film-Pack; diluted pyro-soda; part of negative enlarged to 8 x 10 on Enlarging Cyko No. 5; diluted M. Q. developer.

Architectural subjects lend themselves readily to an artistic portrayal of rainy-day conditions. This is particularly true at night when artificial illumination accentuates the play of light and shade on wet pavements. Mr. Botel has utilized this opportunity effectively in his picture, "Evening After the Shower." With rare, good judgment he has eliminated the direct source of light and has thus avoided the problem of halation. Moreover, the avoidance of sharp reflections in the foreground indicates unusual artistic appreciation of values. Data: March, 9 P.M.; 3¼ x 4¼ Alpine; 4¾-inch Voigtländer Collinear; stop, F/8; 10 minutes; Wratten Panchromatic; pyro; 8 x 10 enlarged negative from 2¼ x 3¼; Engraving Black Carbon.

For the benefit of those who intend to enter the Shore-Scenes Competition for August, the picture, "Fun in the Surf," by W. C. Sawyer, is offered as an excellent example. Unfortunately, there are no data available to aid the interested camerist; but the theme portrayed is one well worth bearing in mind.

Beginners' Competition

FOR some reason, a peculiar pictorial interest attaches itself to an old building that once rang with the whirr and clatter of machinery, and the voices of men. In "The Old Mill," Mr. Cline has selected an attractive and promising theme, although I think that a more successful result could have been obtained had the source of light been at the right instead of in front of the camera. The trees and underbrush at the left of the picture would then have been deprived of the massed and monotonous effect which now disturbs the eye and detracts from the object of greatest interest—the old mill. Data: March, 3 P.M.; sunlight; 3A Ansco; 6¾-inch Modico; stop, F/32; 3-time Burke & James color-screen; bulb-exposure; Hammer Ortho; pyro in tank; print on Azo K Hard X.

There is always something peculiarly appealing about a donkey. In the present instance, Mr. Pratt has chosen an exceptionally good point of view and he thereby avoids the common fault of distorted perspective; but the telegraph-pole at the left, the white birch-tree at the right and the converging surfaces of the stone-wall could have been subdued with decided benefit. The marked perspective produced by the railing and the top of the stone-wall is rather disquieting, although it draws the eye to the center of interest. Data: August, 4 P.M.; bright sun; Speed Graphic; 5-inch Bausch and Lomb Tessar Series 1C; stop, F/8; 1/50 second; Premo film-pack; M. Q. developer; enlarged on P. M. C. No. 6.

Our Contributing Critics

THE picture offered this month to our contributing critics for consideration is "Christmas-Night," by Louis R. Murray.

Merely a Matter of Shadow and Rain

TAKING a stroll, recently, through the town of Brookline, in search of pictorial camera-themes, my friend George N. was crossing the Longwood Avenue bridge, which spans Muddy River, and stopped quite suddenly. Looking in a southerly direction, he beheld an entrancing view composed of Muddy River with its beautiful banks and a wide gravel-path running along beside it, at the left. The hour was 1.30 P.M., the sun being overhead and brightly illuminating the gravel-path which was the most prominent feature in the picture. I happened to be passing at the moment and, in response to an invitation, joined the camerist and surveyed the scene. As he seemed to be doubting the advisability of exposing a 5 x 7 luxury-taxed film, I presumed to interpose. I explained that, although at the time the picture did not appear satisfactory—as a pictorial arrangement—if he revisited the scene at about 8.30 in the morning, he would find that the gravel-path would be partly obscured by favoring shadows of the trees which fringed the sloping bank at the left. My friend appreciated the favorable change that would result, and walked away in search of other camera-material.

A few days later, Mr. N. called at my office with a print of an extremely well-composed picture of Muddy River, made from the spot where we had stood a week before (May 11). The once offending gravel-path was not only much subdued by innumerable shadows of trees, but was deeper in tone than I had expected—because, as my friend explained, it had rained heavily the night before, soaked the gravel-path and imparted to it a darker shade than if it had been dry. Thus a little circumstance like a rain will often improve light-toned features in a picture, such as a path or road.

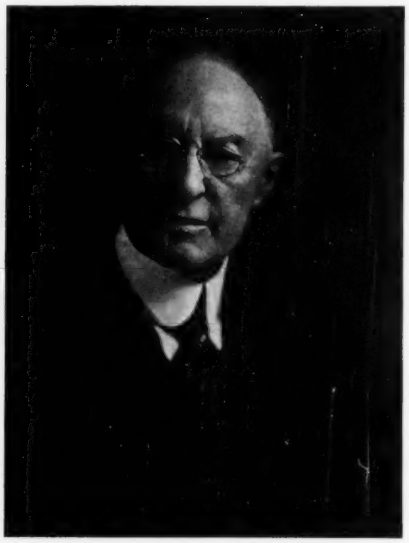
XUM

ON THE GROUND-GLASS

WILFRED A. FRENCH

An Apology

THE portrait that accompanies this paragraph owes its appearance, here, to a number of requests that have been sent to this office during the past few years by persons who fancied that they had a grievance —because the subscription-price of PHOTO-ERA was either indecently exorbitant or ridiculously low; or because the Editor declined to indemnify them for



Bachrach

WILFRED A. FRENCH, PH.D.

losses incurred by dealings with fraudulent concerns that didn't happen to be advertised in PHOTO-ERA; or because the Editor did not return a picture that was a perfect blank regarding its source or origin; or because the Editor did not prevent the luxury-tax from invading the photographic field.

Yes; it is the same unhappy mortal who—though his full name has appeared in clear type in every issue of this periodical for the past fourteen years, also on countless letter-heads and bill-heads—has received innumerable communications in which his strangely unfamiliar and bewildering baptismal name, Wilfred, was spelled variously—Wilford, Welford, Alfred, Willard, Wilbur, Winfred, Milford, Wilburt and, last though not least, Wilson. The climax in this respect was reached, recently, when the secretary of the Springfield Chamber of Commerce—probably a near-sighted individual—sent an important business-communication to the Editor, addressing him as, "Miss Winifred A. French, dear Madam."

If the subject of this portrait has an acquaintance that extends to nearly every quarter of the globe—to a famous or infamous degree—and continues to be the recipient of countless courtesies and expressions of approbation, it must be because of the universal sympathy that is felt for him because of the abovementioned inflictions and annoyances, and not in consequence of any particularly meritorious act or remarkable executive policy.

Photographic Opportunities in the War

MUCH interest has been manifested by readers in the failure to represent by pictorial photography the great event of the delivery, to Admiral Beatty, of the German fleet. The absence of a pictorial photograph by such masters as F. J. Mortimer, Alexander Keighley and Charles Job has been a source of much disappointment to the Royal Photographic Society of Great Britain.

Interested readers wish to know the name of the British painter who is to perpetuate this historical event. The fortunate artist was John Lavery, who was on board Admiral Beatty's ship. He is said to have gathered his data for a canvas to be treasured in England's Chronicles of the War.

Now, regret is expressed in this country that the officials of the Committee on Public Information under George Creel, at Washington, were blind to the importance of sending an American painter overseas, and to have the same opportunity as was afforded the eminent historical painter, John Lavery.

To make up for this deficiency, a notable American painter, Joseph De Camp, of Boston, has been dispatched to Paris to paint the portrait of some distinguished American. At this writing, it is not known who the lucky individual is to be, whether the President, General Pershing or some member of the American Peace Commission. However, thanks to the energetic industry of George W. Harris, the well-known Washington photographer—who has been accompanying the President since his first trip to Paris—excellent and characteristic portraits of every person of importance at the Peace Conference have been produced.

The Sunday edition of the *Washington Star*, the Rotrogravure Section, contained a two-page spread of all the members at the Peace Conference—eighty portraits in all.

The Publisher indulges in the hope that his suggestion to perpetuate by pictorial photographs some of the great events that have happened in Europe during the war will be productive of results, and that American photographers will be credited with achievements of exceptionally artistic merit.

Taking a Picture

MR. HUGH GIBSON relates this story about the Germans in Belgium. They were looting a museum, and Mr. Gibson, coming along with his camera, asked an officer if he might take a picture. "Surely," the officer replied. "There's a wagon full of them. Help yourself."

PHOTOGRAPHIC THRIFT

Whoever sends us a letter that we consider of practical photo-saving value, will receive from us a three-month subscription to PHOTO-ERA MAGAZINE.

Practical Saving-Methods

EDITOR PHOTO-ERA MAGAZINE:

Your correspondent did not state all the little uses to which the Dry Mucilage strips may be put. In my large correspondence I often have postage-stamps which have no adhesive on the back. If a paste-pot is not within reach, I just use two pieces of Dry Mucilage (a strip cut in two), paste them one below the other onto the envelope or package, then moisten the surface, place the stamp on top and rub down. Used in a similar way (only one small piece of strip will do), instead of clips or pins, correspondence may be fastened together and then filed away. I think the makers of this useful article lost a chance to help advertising it by not offering a prize for the longest list of similar suggestions.

T. V. NEWTON.

EDITOR PHOTO-ERA MAGAZINE:

When I am printing pictures from various size negatives, that is V. P. K. 2A Brownie and 2 Kodak, I buy only one size of paper, which is 5 x 7 inches. For the No. 2 size pictures I divide a sheet both ways, making four sheets of paper 2½ x 3½ inches, which provides space for a white border. There is no waste. For the 2½ x 4¼ films, I divide the paper into three equal strips 5 x 2¼ inches. These can be used in most cases for this size of film with very little waste. For the V. P. K. film, I divide the strip previously obtained into three pieces, 1⅝ x 2¼ inches. These can be used with no waste at all. Thus I get respectively 4, 3, and 9 dozen sheets for 20 cents. This also makes another economy, as I do not have half-used packets of the various sizes lying around. Also, the 5 x 7 size of any paper can be obtained wherever there is a photo-shop, which is not always true of the other sizes mentioned. In cutting the paper, I use a trimming-board, with thumb-tacks placed at the various distances required. This allows me to work faster and more accurately when cutting up the paper than if I had to measure every time. These items will interest others I believe, as they have been appreciated by workers of my acquaintance.

FRANCIS JOHNSON.

EDITOR PHOTO-ERA MAGAZINE:

Have not most of us—in enlarging and then on developing a big and expensive sheet of 11 x 14 or 16 x 20 bromide paper—found that our exposure was not enough? Have we not waited till the developer had brought out every possible trace of depth and detail, and decided regretfully on examining the dried result next day that it really wasn't good enough to be shown as our work, or given away as we had planned? What have we done with it? Usually, it went into the waste-basket, when, in fact, a few minutes' work would have converted it into a handsome enlargement.

I wonder how many of your readers, Mr. Editor, are familiar with the possibilities of Chromium Intensifier? Intensifying helps wonderfully when, for some reason, a negative has been underdeveloped, but it is always said that it will not help a negative that is underexposed, for it is impossible for any chemicals to supply detail where there has not been exposure enough to impress the plate. Granted; but where the underexposure was only slight, I have often been able to effect a wonderful improvement with the aid of Chromium Intensifier. It occurred to me that the conditions are very different in the case of these underexposed enlargements, so I tried intensifying one of them, and was more than pleased with the rich, warm tone that resulted.

The only essentials in using this method seem to be, first, that the print or enlargement to be intensified must have been completely fixed and thoroughly washed—if in doubt, fix and wash again—and most important is a thorough washing of the bleached print, before redevelopment. I have found that not only is the degree of intensification greater, but the resulting tone is far more pleasing, when Amidol is used as the redeveloper. Two hints—first, don't be afraid to leave the print—or negative—in either bleach or redeveloper too long, for superior results will be obtained if both are given time to act as thoroughly as possible; second, a preliminary hardening in a dilute formalin-solution will protect the sensitive emulsion on paper against any possibility of blistering. This is not necessary with negatives.

I may add that I have always had far more successful results when using the above-named product and redeveloping, than when using any form of mercury intensifier, or any combined method.—J. E. HORNING.

EDITOR PHOTO-ERA MAGAZINE:

Whatever saves waste in chemicals nowadays may be classed as thrift and one of the simplest aids in this direction is to keep a small tin cup of paraffin handy. To preserve any chemical which tends to absorb moisture readily, the dipping of the corked bottle in melted paraffin makes a better seal from air than a glass-stopper. Prepared developing-solutions will keep in good condition very much longer if treated in this way. In fact, it is possible to mix quite a batch of developer of the M. Q. class and preserve for a number of months without loss if placed in small bottles—two- or four-ounce size—filled to the necks, sealed, and stored in a cool dark place. Another use is to preserve labels from discoloration, or dropping off a bottle—a frequent source of loss, since one cannot safely use the contents if not sure of its nature. For this purpose write the label with waterproof India ink on a tough unsized paper,—such as good bond,—clean the surface of the bottle to remove any trace of grease, and attach with strong paste or liquid-glue rather than mucilage. When dry, warm before a fire and brush over quickly with melted paraffin, applied with a rag or stiff brush. If this hardens before one can spread it evenly just warm the bottle over a stove or lamp and wipe off the surplus wax—the bottle had best be empty when doing this as a cold solution might crack it. A label so treated will last a long time, as I know from experience.

W. S. DAVIS.

XUM

ANSWERS TO QUERIES

W. A. G.—**A formalin or formaldehyde-bath will harden gelatine-film.** This liquid is colorless and possesses a distinctive odor. Care must be used as formalin-vapor attacks the mucous membranes of the eyes, nose and throat, and causes intense irritation. In many cases formalin replaces and is safer than alum. To harden a film and to prevent frilling, a 10 per cent solution will be found suitable and it should be used immediately after fixing for both negatives and prints. Formalin may be incorporated in the developer. The following is a satisfactory formula:

Hydrochinone.....	40 grs.	16 g.
Sodium Sulphite....	400 grs.	160 g.
Formalin.....	50 drops	20 ccs.
Water to.....	5 ozs.	1,000 ccs.

The above is a one-solution developer ready for use, no bromide or alkali is required when formalin is used. This formula will give strong contrasts.

Formic aldehyde will harden gelatine and make it insoluble so that a film—on glass or on paper—may be made to resist the action of boiling water by soaking it for five minutes in a mixture of 1 part commercial formalin with from 8 to 12 parts of water. Such a strong solution is seldom required, 1 part to 20 or 25 of water is sufficient to prevent frilling if ten or fifteen minutes is allowed. A disadvantage of formalin is that subsequent intensification or reduction becomes difficult.

K. B.—**To renovate faded print** is rather a difficult matter. If the print is valuable enough to renovate, it is too valuable to expose to the risk of such a process. The best plan would be to make a copy of the picture. If it is only faded you will find that a very satisfactory copy may be made—much better in appearance than might be supposed. After you have obtained a good negative of the picture, you might try to renovate the faded print. First, wash it thoroughly and then intensify it very slightly with mercury and ammonia in the same manner that you intensify a negative.

C. O. F.—**To remove a stain from a film-negative** requires great care in order to avoid injuring the negative. Although the stain does not appear to be oil, yet, you might try a weak alkaline solution. This might remove the stain if it is oil. If this has no effect, try some stain-removing solution such as alum, 1 ounce; citric acid, ¼ ounce; water, 1 pint. A suitable alkaline solution would consist of 20 grains of washing-soda to the ounce of water.

W. H. Y.—**To calculate a depth-of-focus table for a 5-inch lens** the hyperfocal distance must be obtained first by squaring the focus of the inches multiplying by 100, and dividing by the F-number of the stop. For a 5-inch lens at F/8, this would be:

$$5 \times 5 \times 100 = 2{,}500. \quad 2{,}500 \div 8 = 312\tfrac{1}{2}.$$

The hyperfocal distance at F/8 is, therefore, 312½ inches, or approximately 26 feet.

To find the limits of depth when the focusing-scale is set at any particular distance, the hyperfocal distance is first multiplied by the distance chosen. Thus, if the scale is set at 6 feet, we multiply 26 by 6, which gives us 156. This figure is then divided by (*a*) the hyperfocal distance added to the distance on the scale, and (*b*) the hyperfocal distance with the distance on the scale subtracted from it.

Since (*a*) is 26+6=32, we divide 156 by 32, and so get 5, nearly. In the case of (*b*), we take 6 from 26, leaving 20, and divide 156 by 20, obtaining in this case 8, nearly. Therefore, a 5-inch lens at F/8 focused for 6 feet will make a clear picture of objects nearly 5 feet to nearly 8 feet from the camera.

In finding the hyperfocal distance 100 was used as the divisor, on the assumption that a degree of sharpness represented by a circle of confusion not more than 1/100 of an inch is permissible. If a greater degree of sharpness is desirable, as it certainly is when negatives are to be enlarged, the divisor may be increased to 200 or 250, allowing for a circle of confusion of 1/200 inch and 1/250 inch respectively.

C. K.—**Moisture on a condensor** is usually due to warm moisture-laden air striking the cold glass-surfaces. This moisture will disappear gradually as the glass warms up or the condensor may be warmed slightly before beginning to use it. If the enlarging-apparatus is ventilated thoroughly there is very little trouble from condensation.

M. S.—**How a skylight should be built** in the quarters you speak of, it is a difficult task to explain to you as the *outward* conditions have more to do with the light than the *inward* conditions; for it is clear, at the outset, that there must be no obstructions or shade-trees or reflections from colored buildings—that is a *new* proposition. It requires an artist of years to be able to handle the skylight where the sun at any time of the day is likely to strike it, and at the same time give the customers what they justly deserve—that is, honest work for an honest dollar. From your correspondence, especially where you ask questions with reference to the background and the lenses, it is evident that you—while perhaps able to make pictures at times, that have been recognized as having certain merits—should hire a skilled photographer for at least one or two years to teach you the sort of portraiture that the public wants.

A. B. G.—**Photo-Era Reference Library** is a name given to an exhaustive list of articles on timely, practical subjects by authoritative writers, amateur and professional, that have appeared in PHOTO-ERA, up to December, 1916. This valuable list comprises subjects under the following captions—Landscapes; Flowers and Trees; Sunlight and Atmospheric Effects; Orthochromatic Work; Color-Photography; Marines and Waterscapes; Architecture; Speed-Work; Telephotography; Animals and Pets; Portraiture; Lantern-Slides and Optical Lanterns; Tropical Photography; Enlarging; Coloring; Commercial Work; Printing; Lenses, Shutters and their Use; Travel; Composition and Art-Principles; Developing; After-Processes; Flashlights; Home-Made Devices; Working in Miniature; Snow-Scenes; and Miscellaneous.

The issues that contain the indexes of this desirable and varied store of photographic knowledge are, June, July, August, October and December, 1916, and may be had for $1.15, including postage, in the United States. These issues are valuable to the beginner.

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

The Metropolitan Section of the P.P.S. of N.Y.

THE Metropolitan Section of the Professional Photographers Society of New York held its first dinner at the Hotel Astor, Saturday evening, May 10, under the new *régime*—where the annual dues of the section were raised from five to twenty-five dollars. The dinner was tendered to Mr. Wm. Shewell Ellis of Philadelphia, and our guest of the evening was Mr. L. B. Jones of the Eastman Kodak Co. We also had the pleasure to have with us, at the dinner, the members of the State Board, who were holding a special meeting in the city in the interests of the coming convention which is to meet here the first week in February, 1920.

Dudley Hoyt, the Chairman, greeted the members cordially and thanked them for their whole-hearted support in the reconstruction of our society. He spoke of a new era opening up to the photographer, if the photographer was only wide-awake to the possibilities of photography being used in the field of illustrating and advertising and, to make his point clear, he introduced Mr. Ellis, Mr. Jones and Mr. E. B. Core, all of whom made appropriate remarks.

The dinner was a great success. A fine spirit prevailed among the men, and it was a delight to look up and down the festive board where a large body of men had gathered in an environment of refinement and excellent taste, not merely to feast, but for a serious purpose, to make their profession and association something worth while.

L. L. DE ANQUINOS,
Secretary.

The New Hastings Studio

THE studios at 21 West Street, Boston, U. S. A., known for many years as the Elmer Chickering Studio, Inc., were taken and operated early this year by Orrin Champlain of Boston and Geo. H. Hastings of Newton. June the first, Mr. Champlain retired, leaving Mr. Hastings the sole proprietor of the studio which is now known as the Hastings Studio and managed personally by Mr. Hastings, who enjoys a high reputation as an artist-photographer.

P. A. of A. Meeting at Cedar Point, Ohio

THE reorganized Photographers' Association of America will hold its annual meeting at Cedar Point, Ohio, July 28 to August 2. Several well-known speakers and demonstrators will be present to make the several sessions interesting to all who attend. The entertainment-committee has arranged a program that will add much to the attractiveness of the meeting without detracting from its educational value to professional photographers.

The Clarence H. White School of Photography

THE curriculum of the tenth summer-session of The Clarence H. White School of Photography is described in a very attractive, illustrated booklet to be obtained from Mr. White, 122 East 17th Street, New York City. The summer-session is held at Canaan, Connecticut, among the beautiful Berkshire Hills. The pictorialist will find the school and its location especially adapted to his needs; although all branches of photography are taught as well. Mr. White has conducted successful classes in photography since 1907 at Columbia University and at the Brooklyn Institute. Amateur and professional photographers will find it well worth while to attend the summer-session of 1919.

Euclid Lodge A. F. & A. M., Boston, U. S. A.

THE many subscribers and readers of PHOTO-ERA who are members of the Masonic Fraternity may be interested to know that of the comparatively few daylight lodges in the United States, Euclid Lodge of Boston is the youngest. Euclid Lodge was constituted a little over two years ago and, under the progressive leadership of its present master, Charles Dennée, piano-instructor at the New England Conservatory of Music, it has attained a place of distinction among the Masonic bodies of the East. Its membership consists largely of musicians of the first rank, including many members of the Boston Symphony Orchestra and the faculty of the New England Conservatory. A conspicuous and exclusive feature of Euclid Lodge is a composers' concert given by members of the Lodge at the close of each regular meeting for the entertainment of members of the Masonic Fraternity. The programs of these concerts consist of original compositions of members of Euclid Lodge and other American composers, and are invariably well attended.

Photography and the British Chemical Manufacturing Industry

IT is now generally acknowledged that there is no real necessity to use potassium for photography, sodium compounds being equally good. The Germans had almost a monopoly of potash-sources, and so they flooded not only their own literature, but the photographic text-books of other countries with formulæ which mentioned potassium-bromide, potassium-metabisulphite, and other potassium-compounds, deliberately avoiding the suggestion of sodium-salts. The full bearing of statistics it is sometimes difficult to realize: but a very few will suffice to show how successful was the German propaganda to push the use of potassium-salts. In 1865 Germany exported 100,000 tons of these compounds, while in 1910 her exports were well over 7,000,000 tons. Of course, the great proportion of this enormous quantity was for other purposes than photography, but it serves to show the growth of the trade in general.

Figures of the chemical industry in this country during the four years of war are not available; but it is astonishing enough to realize that all our own war-demands and many of those of our Overseas troops and of our Allies, as well as those of the many branches of trade which had to be kept going, were supplied during the whole period of the war from British sources. Some very large demands for chemicals were for entirely new purposes, as, for instance, hypo, huge quantities of which were suddenly called for, to serve as a defense against gas-attacks.

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Is the manufacture of photographic chemicals to remain in this country? The answer should be in the affirmative. British-made chemicals are equal to many, and better than most. It is not fair to draw conclusions at the present moment on the question of prices, because of the prevailing conditions. But when circumstances become more normal, when peace is real, labor-disputes are settled, and the paths of trade freed from some of the existing obstacles, we have no doubt that our manufacturers will be as keen to keep the trade as they were to maintain supplies through the most trying four years of war. In the meanwhile, we amateurs can at least resolve henceforth to use none but British-made products in our hobby.

W. RANFORD, in *The Amateur Photographer*.

The Question of Platinum

IN reviewing the chemical market, *The Photographic Dealer* (London) states that platinum bichloride and chloroplatinate are still very scarce and expensive, and there is no sign of a greater supply until more settled conditions obtain in Russia.

Germany has probably seen to it that all available platinum in the Ural Mountains has been mined during the past four years; and, no doubt, the Allied Powers are aware of the circumstance and have not overlooked this in dealing with Germany. We hope that it will be to Russia and not to Germany that our English cousins will have to look for their next supply of platinum.

Special Competition of New York Camera Club

THE Camera Club of New York announces a very attractive competition—open to the public—for the best pictures of the Joan of Arc statue, located in Joan of Arc Park, at 93d Street and Riverside Drive. The competition is open to professional and amateur photographers. The pictures will be judged by a competent jury. It will be a matter of general interest to see whether the honors go to the amateurs or the professionals. Aside from the attractive prizes, the competition should arouse interest in a subject of importance in history and romance. Through The Camera Club of New York, George F. Kunz, president, offers in cash, or such equivalent as the winners may decide, $30 for first prize, $20 for second, $15 for third, and $10 for fourth prize. The winning prints to become the property of The Joan of Arc Statue Committee, with right to reproduce, giving the photographer full credit. All prints submitted will be publicly shown and judged at The Camera Club rooms, during October, 1919. Prints must be mounted, and have the name and address of the photographer plainly written on the back of each mount, and delivered on or before September 30, 1919, to The Joan of Arc Statue Committee, The Camera Club, 121 West 68th Street, New York City.

CHARLES I. BERG
WILLIAM D. MURPHY
WILLIAM E. WILMERDING
Committee.

The London Salon of Photography

THE London Salon of Photography, International Exhibition, will be held at the Galleries of the Royal Society of Painters in Water-Colors, 5a Pall Mall East, London, S. W., from Saturday, September 13 to Saturday, October 11, 1919. The last day for entries at the Gallery is Tuesday, September 2, 1919. Copies of the conditions of entry may be obtained from PHOTO-ERA or from The Honorable Secretary, The London Salon of Photography, 5a Pall Mall East, London, S. W. 1, England, who will answer inquiries gladly.

Fourteenth Annual Wanamaker Exhibition

THE Fourteenth Exhibition of Photographs under the auspices of John Wanamaker, Philadelphia, will be held March 1, 1920, and entries will close Saturday, February 7, 1920. Rules for exhibitors and other information may be obtained from Photographic Exhibition Bureau, Main Floor, Chestnut and Juniper Streets, John Wanamaker, Philadelphia.

Photographic Workers' Union of America

Editor of Photo-Era: In acknowledgment of your letter of May 26, I wish to state that I am very much pleased with your expressed interest in our organization, and I shall endeavor to give you a brief outline of this organization.

First, it is composed of photographic workers engaged in every branch of the photographic industry, whether working in a studio or in a photo-finishing place, etc., but does not include photo-engravers or "movie" men. It is an industrial organization based on fellowship and justice to all.

We think it is high time that the photographic workers should not lag behind the workers of other industries without an opportunity to obtain better working-conditions, a decent living-wage, etc. There is, probably, no other class of workers in the United States whose interests are so disregarded by the employers as those in the photographic industry. Any rat-hole, so long as it is sufficiently dark, is good enough for a darkroom. Any two by four corner, no matter how badly ventilated, is always good enough to crowd in three or four retouchers wearing out their eyes all day. And as for the operator, he must be ready to give his services whenever business requires—day and night, Sundays included. The neglect of his family or his ownself, whether or not he gets his luncheon in time, or never gets any, does not bother the employer so long as the sitting is made at the appointed time. You know as well as I do that the above conditions are absolutely true and we intend to put a stop to this, by organizing the workers of the photographic industry the same as all other industries are organized. We wish the co-operation of all the photographic journals, including yours, inasmuch as we demand only justice and fairness for a miserable, mistreated class of workers. You ought to be willing, at any time, to publish an article favoring our cause.

Thanking you for your considerable interest in our organization and hoping that you will give your hearty support, I am,

Yours very truly,
HOWARD UDEL,
Secretary.

New York City, June 2, 1919.

Something for Nothing

IT is astonishing that in these days of increased cost of production there should be persons who still persist in sending a *postcard* asking for free sample copies of a high-class publication. If the publisher complies, that is the last of the matter. The anticipated subscription usually fails to arrive and the postage, packing and time goes for nothing.

A thoughtful or serious-intentioned person will send a letter and enclose, at least, a three-cent stamp; or, he will send a letter—a postcard will suffice—asking the price of a sample copy. A return-postcard gives the correspondent the desired information, and it is then time for him to decide what to do—to send twenty cents in stamps or to consult the local library.

To Test Platinums, Bromides and Other Papers

Often it is of advantage to know how to test a photographic paper to determine its grade. *The Amateur Photographer* offers some suggestions on this subject. If a drop of a solution of mercuric chloride is placed on a dark part of a print, it will bleach it very quickly if that print is a bromide or gaslight-print, but will not bleach it if it is a platinotype. It is necessary to point out, however, that although the test is good enough if we can be sure that the print is either the one thing or the other, it by no means follows that every print that cannot be bleached in this way is a platinum print. We had a case brought to our notice during the past week, in which a photographer had tested a commercial picture postcard in this way, and, getting no bleaching-effect whatever, asked us if he was correct in supposing that the card was a platinum one. Its price alone might have shown that it could hardly be; but, in addition, quite a superficial examination revealed that the image was one of printing-ink on the surface of the paper, and the grain of the image indicated that the picture had been produced by collotype or one of the kindred processes. In this case the grain or texture of the print should have been sufficient to show that it is not a purely photographic product.

A Card-Index for More Business

Slack times occur in nearly every business, and they cannot be filled up in a better way than by making an effort to procure additional trade. It is, however, somewhat difficult to do this without some jumping-off point, which will prevent one from saying, "I want to do something, but how on earth can I do it?" There can be no doubt that in photography there is no better way to advertise than through the post, and that by letter rather than by circular. The important point in starting on this work is to have a list of persons to whom a direct appeal can be made with some prospect of success, though too much must not be hoped for at the beginning. It is a good plan to keep a special card-index of possible customers for the sole purpose of advertising, apart from any order which may have been given previously. It need not be a large one, for the names should be carefully selected and annotated with any information which may be useful. It should contain, first, the names of customers who have given orders during any period which may have been decided upon, and the names of prominent residents whose patronage would be desirable. In every case where there is any possible excuse for making a personal reference an original letter should be written, embodying a specific suggestion, such, for example, that especially advantageous arrangements have been made for the production of colored miniatures, or that a new style of printing, mounting, or enlarging has just been introduced, and that prints from the existing negatives can be supplied in these styles. Sometimes, it will be well to enclose a small print to indicate the class of work which is being offered. In the case of those not already customers, a general letter inviting inspection of a collection of new styles may be sent. Above all, the appearance of a circular must be avoided, even to the exclusion of carbon copies. It is now possible to obtain copies made showing the texture of the typewriter ribbon, and these should each be signed in ink in the way usual with other business-letters. The notes on the cards should indicate the class of work to be offered, say, to elderly people or their families, an announcement of readiness to make portraits at the sitter's own home; to parents of babies, particulars of miniatures and enlargements; to bridal sitters, anything relating to new styles, with a reference to the possibilities of utilizing portions of groups, etc., already made. It does not matter whether any order results in the particular line suggested, the object being to find an excuse for bringing the photographer's name before customers, from time to time—not as an ordinary advertisement, but as a personal matter.—*British Journal.*

Photographs of Automobiles

Possibly no industry uses photographic illustrations for advertising-purposes as does that of the automobile and, with the exception of the airplane, none offers a better future for the commercial photographer. As with other branches of commercial work, a certain knowledge of the technique of the particular industry is a great advantage to the photographers, who should be able to appreciate ideals of construction and design and to put these points forcibly in the treatment of the photographs. A set of photographs made to illustrate the desirable qualities of a car requires to show the arrangement of its seating, *i.e.*, its comfort for the passengers, the graceful and artistic lines of its design, and also the car speeding along a stretch of country-road. Such a picture as this, with its story of the delights of speed, goes far towards making the purchasing public know and appreciate that particular model. There are still other ways in which the manufacturers might learn to rely upon the commercial photographers instead of on the draughtsmen. Details of engines, gears, universal joints, friction-drives, the build of the chassis, and all the other miscellania of the motor-car are quite easy to photograph, provided the photographer and maker work hand in hand. But such work cannot often be done in a studio, though even then nothing ought to prevent the production of satisfactory pictures. In our opinion many commercial operators rely too much on "blocking out," when a few sheets of white paper or other light material will often suffice to isolate elements of the picture from their unwonted surroundings. Many details of a car are readily amenable to this treatment, which, in any event, simplifies the work of blocking-out in cases where it is necessary.

British Journal.

Sale of Halftones Published in Photo-Era

Many amateurs have been printing some of their favorite subjects on postcards. With this end in view, several workers whose pictures have been reproduced in Photo-Era have procured from us the original halftone-engravings which they are utilizing, advantageously, in many ways.

One amateur, of our acquaintance, is now using the halftone of one of his successful pictures published in Photo-Era, several years ago, for the purpose of decorating his stationery (full-sized letter-heads) together with the legend, "Was awarded second prize by Photo-Era, The American Journal of Photography."

If the halftone block is the size of a postcard, or even smaller, it can be used by a good printer in the preparation of picture-postcards. If the block should be a little larger than 3¼ x 5½ (size of a postcard), it can be easily cut down to the required size.

Any workers whose pictures have appeared in Photo-Era during the last five years may have these perfectly good halftone blocks at *one-half the actual cost* to us, provided they will procure them from us without delay and provided that the halftone-blocks are available.

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LONDON LETTER

CARINE AND WILL CADBY

THE English are at last beginning to take kinema-film production seriously. Of course, we have long been familiar with accounts of the wonderful cities in the States, with their exact replicas of historic places, all built up for the sake of film-making. But here we have nothing of the sort, and efforts in this direction have been on a tentative and not too ambitious scale. Now, however, the Garrick Film Company has bought a large country house in Surrey. Standing in its own grounds, it contains some beautiful doorways and painted ceilings, and an excellent ball-room which is used as the studio proper. By means of a new method of lighting, it is possible to make pictures in all the rooms, and this, naturally, is a great asset in faithful photography. Besides this, a comprehensive scheme of panels has been introduced, and with these and a large store of furniture any room can be "camouflaged" most expeditiously.

We are glad to welcome the reappearance of the Kodak magazine, *The Professional Photographer*. Owing to the acute shortage of paper, during the last months of the war, this very useful little monthly journal was temporarily discontinued. But presumably Messrs. Kodak, like many other people, found paper pouring in on them from goodness only knows where directly the Armistice was signed, and the result is that the April number comes out on beautiful glossy paper that does full credit to the reproductions. Among other interesting items there are some excellent illustrations of the work of Mr. Peter Elfelt, a leading professional photographer of Copenhagen. They are different to anything we have in this country, and superior to a good deal of our work. It is a little difficult to say what constitutes the marked difference, and we cannot help thinking that the models themselves are largely responsible, they are so un-English. But apart from this, the portraits are so simple and direct and severe in treatment, and one has the feeling when looking at any one of them that they must be good likenesses and clever indications of the characters of the sitters. Mr. Elfelt is one of the leading spirits in a group of photographers whose influence is being felt, not only in Denmark, but throughout Scandinavia. His aim is to improve the quality of photographic work and to raise the status of photography. He has been president of the Danish Professional Photographers' Association for many years, and is an honorary member of the corresponding Association in Norway.

We hear that Mr. Ward Muir is shortly to visit the battle-fields of France and Belgium, needless to say, camera in hand. He was on the Italian front when the Armistice was declared, getting pictures under exceptional difficulties, and not without the exercise of much tact and diplomacy towards the jealous holders of the line in the high mountains. Things are being leveled out at such an amazing pace in the devastated areas of France and Belgium, that soon there will be nothing particularly sensational to see—at least so we are told—and it is to be hoped that Mr. Muir will not have the same experience as the amateur photographer (on a conducted tour in France) who, as shown in a recent issue of *Punch*, is made to exclaim, "Charming spot; but rather disappointing. I had quite hoped it would have been all smashed up." Why do draughtsmen always make photographers such unprepossessing figures? The poor camera-man in *Punch* is no exception to the rule, and most of us would certainly go any lengths to avoid such an individual.

The Royal Air-Craft Force Exhibition at the Grafton Galleries has drawn very big crowds. Presumably it must be nearly the last of the war-exhibitions, and certainly amongst the most interesting, inasmuch as the point of view—that is, the position of the camera—is so different to anything we have been accustomed to. For all that, we are rapidly getting used to air-pictures; but an enlargement of an actual aërial photograph of a phosphorus bomb exploding, which was amongst the exhibits, struck us as something new and wonderful even in this newest form of photography.

At Kensington High Street, London W., there is an old-established drapery-firm well known under the name of Derry and Toms. Readers may wonder what in the world this has got to do with photography, as well they may. But the connection is quite intimate, and to old-fashioned photographers, like ourselves, almost alarming; for Messrs. Derry and Toms have suddenly plunged into our world by announcing an Amateur Pictorial Photography Competition and Exhibition to be held in their exhibition-galleries at Kensington, High Street. There are to be prizes, too, the total value of which the firm places at over one hundred pounds.

When we had got thus far through the particulars, we thought we saw daylight. We imagined the list of prizes would contain the latest restaurant-frocks, evening-cloaks, jumpers, silk stockings, and hats from Paris, and we thought, how clever; all the girls will be routing out their forgotten cameras in the hope to win some much-coveted garment.

But no, we were wrong. The first prize winner will carry away—an oil-painting! The second, third and fourth gain two watercolors apiece, and the fifth is consoled with a pastel. The photographs will be judged solely by F. J. Mortimer, F.R.P.S., and the "best" 300 will be exhibited in the Derry and Toms exhibition-galleries for one month before the winners' names are disclosed. We cannot help wondering if this curious delaying arrangement has been devised to allow the worthy judge, the solitary despot, who holds in his hands the destinies of so many pictures, time to get to the uttermost parts of the earth, so as to escape the wrath of those who have not won prizes. If this is the case, we think that the management has wrongly estimated human nature, and there need not be the slightest fear for Mr. Mortimer's safety, for it is not as if the prizes we imagined had been offered. At the same time we think that in these democratic times it would have been wiser to spread the responsibility of judging over several pairs of shoulders—a longer and much more arduous job, no doubt.

We cannot restrain a feeling of sympathy with the authors of the "best" 300 photographs when we think of them, all through the sweltering days of June (the time during which the artists' names are not revealed) visiting the show, which is to be free, gazing with suppressed pride at their own masterpieces, and yet not allowed to reveal their proud position! It is an ingenious and amusing, but diabolical device.

RECENT PHOTO-PATENTS

Reported by NORMAN T. WHITAKER

THE following patents are reported exclusively for PHOTO-ERA MAGAZINE from the patent-law offices of Norman T. Whitaker, Whitaker Building, Washington, D.C., from whom copies of any one of the patents may be obtained by sending fifteen cents in stamps. The patents mentioned below were issued from the United States Patent Office during the month of April, the last issues which have been disclosed to the public.

Patent, No. 1,298,641, a Two-Color Picture-Camera, has been granted to Frederick W. Barnes and Ernest C. Allen of Rochester, N. Y., assignors to Eastman Kodak Company of Rochester, N. Y.

David M. Hurlburt of Rochester, N. Y., has invented a Photographic Exposure Mechanism, patent, No. 1,298,723. This patent has also been assigned to the Eastman Kodak Company.

A Photographic Camera patent, No. 1,298,791, has been granted to William A. Riddell, assignor to Eastman Kodak Company, Rochester, N. Y.

Albert J. Matter and Fred V. Conley of Portland, Ore., have been granted patent, No. 1,298,755, a Silent Camera-Shutter.

Patent, No. 1,299,431, a Photographic Camera, has been granted to Alfred Dawson of Kent, England.

Alfred Z. Myrup of Racine, Wis., has invented a Camera, patent, No. 1,299,992.

Patent, No. 1,300,729, Process of Preparing Grained-Toned Photographic Negatives and Positives and Producing Printing-Plates therefrom, has been granted to William C. Huebner, Blerstein Patent Co., Buffalo, N. Y.

Henry Hess of Philadelphia, Pa., has been granted patent, No. 1,300,613, on a Photographic-Camera Exposing-Mechanism assignor to Hess-Ives Corporation of Philadelphia, Pa., a corporation of Virginia.

A new Observation-Camera Mount has been invented by John Frolek, Trapp Lake, British Columbia, Canada. Patent, No. 1,300,716.

Howard L. Quick of Brooklyn, N. Y., has been granted patent, No. 1,300,773, Focusing-Device for Motion-Picture Cameras.

Carl E. Akeley of New York, assignor to Akeley Camera Inc., New York, has invented Support for Motion-Picture Cameras and the like, patent, No. 1,300,805.

Carl E. Akeley has also received patent on a Camera Lens-Holder, No. 1,300,806.

Frederick E. Ives of Philadelphia, Pa., has received patent, No. 1,300,616, Colored Photographic Image and Method of Producing the Same.

No. 1,301,967, on Aërial Photography, was invented by Samuel Parks, Las Cruces, New Mexico.

William J. Burrows and Horace B. Lawrence of Vernon, Ala., have received patent, No. 1,301,815, a Photographic Camera.

A Focusing-Finder Attachment for Cameras has been invented by Fred P. Clark, Seattle, Washington, assignor of one-half to Jerome P. Coffin, Seattle, Washington. Patent, No. 1,301,819.

Joseph Becker, Washington, D. C., assignor to Eastman Kodak Company of Rochester, N. Y., has been granted patent, No. 1,301,897, Photographic Camera.

Patent, No. 1,302,255, a Focusing-Device for Camera, has been granted to Edgar E. Webster, Chicago.

Elliptic Iris, patent, No. 1,302,359, has been invented by Frank E. Garbutt.

William C. Motteram of Philadelphia has been granted patent, No. 1,302,408, Tank for Developing Photographic Films.

Monomet-Hydroquinone Developer

"MANY formulæ of the developer monomet-hydroquinone have been given in *The British Journal*," says Tan Hock Ann, "but none have been given as to the time it takes to give a plate of the same density as when the same quantity of metol-hydroquinone was used.

Prior to the war I was fond of using a metol-hydro formula:—

Metol	30 grs.
Hydroquinone	45 grs.
Potass metabisulphite	45 grs.
Water	10 ozs.
Sodium sulphite	1 oz.
Sodium carbonate	1 oz.
Water	10 ozs.

For use I took 1 ounce of each and added the same quantity of water. At the temperature of 80 degrees F. I noticed that it took 2½ minutes to develop a plate properly. Metol being expensive, I reduced the quantity by one-third and increased the hydroquinone similarly. I noticed that it took 3 minutes instead of 2½ to develop a plate up to the density I required, and, what was more, I found that the developer was particularly good for the Paget bromide paper.

Not being able to obtain metol a couple of years ago, I was offered Monomet. I used the same formula, substituting it for metol, and developed for three minutes, but to my astonishment I found that my negatives were very dense. I made some experiments by diluting the developer. I found that to obtain the same density as would be given by my old developer, I had to dilute with 2½ ounces of water for every 1½ ounce of the Monomet-hydroquinone developer instead of 1½ ounces of water with the metol-hydroquinone. Thus it will be seen that the ratio of the strength of Monomet to metol is five to three.

My present formula is:—

A.	Monomet	20 grs.
	Hydroquinone	60 grs.
	Potass metabisulphite	80 grs.
	Water	10 ozs.
B.	Sodium sulphite	1 oz.
	Sodium carbonate	1 oz.
	Water	10 ozs.

The above can be made into a single-solution developer, if one does not care for two solutions, and keeps well. For use, I take ¾ ounces of A, ¾ ounces of B, and add 2½ ounces of water and a few drops of 10 per cent solution potassium bromide, and develop for three minutes at 80 degrees F. For bromide paper, I prefer to dilute with an equal quantity of water, and develop for one minute."

WITH THE TRADE

Reorganization of Cooper Hewitt Electric Co.

THE General Electric Company by the acquisition of all the common stock of the Cooper Hewitt Electric Company has secured control of the latter company. The Cooper Hewitt Electric Company for the past sixteen years has built up a very extensive business in industrial and photographic lighting among all the large industrial manufacturers, motion-picture studios, photographers and photographic laboratories. The Company will be operated under the regulation and management of the General Electric Company and the following Directors assumed office on June 3, 1919: C. E. Patterson, Comptroller, General Electric Company, New York City; C. W. Stone and N. R. Birge, General Electric Company, Schenectady, N. Y.; G. C. Osborne and W. R. Burrows, Edison Lamp Works of the General Electric Co., Harrison, N. J.; L. P. Sawyer and W. H. Roberts, National Lamp Works of the General Electric Co., Cleveland, Ohio; Grosvenor Calkins, Attorney, Boston, Mass.; and W. A. D. Evans, Cooper Hewitt Electric Company, Hoboken, N. J. Mr. W. A. D. Evans, who has been connected with the Cooper Hewitt Electric Company since its inception, will be in actual charge of the company as president and treasurer. Mr. N. R. Birge will be vice-president, Mr. C. P. Hamilton, Assistant Treasurer and Mr. E. E. Davies, secretary and auditor. The present policy of the company in its field of industrial and photographic lighting will be continued. Increased facilities will be provided shortly to take care of the rapidly increasing business.

The "Enemy-Goods" Problem

IN a lengthy editorial devoted to trading in enemy-goods, *The Photographic Dealer*, London, mentions the following incident. "Looking in the other morning at a dealer's establishment in the west-end of London, we just missed an officer of the Coldstream Guards who had failed to persuade the dealer to make an offer for some quite new German photographic apparatus. In another case, we learn that six pairs of Zeiss binoculars were offered to a well-known London firm, and that offer was accepted." Probably very much the same state of affairs exists, or will exist, in this country, and we are informed that the United States War Trade Board and Federal Trade Commission are watching the situation carefully.

Advertising Enemy-Products

TALKING of propaganda in favor of German cameras and lenses, our English cousins have certainly been very active during the past few years. The campaign has been conducted, in all seriousness, against enemy-goods, but not without inadvertently advertising the hated product, which has been frequently used as a standard with which to compare a British product. When a British lens is offered for sale—whether new or second-hand—why not let it tell its own story of excellence and capacity? Why compare it to an enemy-product and thus advertise the latter?

In the case of advertising an enemy-made equipment, and thus enable the innocent owner to make a sale, because such a sale "cannot in the least affect the original makers," is it not possible that to facilitate such a transaction is to work against home-interests? If the customer did not purchase the enemy-equipment, might he not be obliged to patronize a British, if not an American camera manufacturer?

New Plate-Sizes in England

THE decision of the British Photographic Manufacturers' Association to induce British camera-manufacturers to adopt standard sizes of plates has aroused considerable comment. The consensus of opinion seems to favor the elimination of the many sizes of "vest-pocket" and "coat-pocket" cameras. Even the popular 3¼ x 4¼ and 3¼ x 5½ (postcard) sizes are to give place to 8 x 12 cm. The adoption of metric sizes is thought to augur well for British foreign amateur trade. It is understood that this transition is to be gradual and that owners of cameras using sizes of plates that are to be displaced will suffer no inconvenience. However, in time it is hoped to reduce the number of sizes to a few that are universally standard among camera-manufacturers and plate-makers. The plan to substitute numbers for the plate-sizes is thought to presage difficulties due to clerical errors.

Three Facts about Advertising

EXPERIENCE, backed by the law of general averages, proves that the first appearance of an advertisement does not bring business or even create much curiosity. The second appearance does little else than suggest attention; the third may mean business, and the fourth may mean more business; the fifth impresses the reader, and the sixth is felt by the advertiser.

The man who expects his advertisement to bring business or create comment immediately is as foolish as the man who finds fault with the water because it does not boil as soon as he starts the fire under it. The strength of advertising is in its latent power.

To discontinue advertising is to destroy a large proportion of the preliminary education of the possible customers who are beginning to feel its influence.

Exchange.

A Strange Consensus of Opinion

A DISCUSSION arose the other day concerning the respective merits of two prints from the same negative, the one made on Azo and the other on Cyko. In the course of the discussion in walked Mr. Brushwood, the Cyko demonstrator for this district. The problem was turned over to him. And wonder of wonders, he picked the Azo print. Not fifteen minutes later we had a second visitor in the person of Mr. Cross, the Eastman paper demonstrator of this district. Thinking that we would get a consensus of expert opinion, the prints were given to him for inspection. To say that we were "flabbergasted" when he picked the Cyko print as the best, is putting it mildly. Explanations were then made and you can guess who got the laugh.

The POD.

Cramer New England Representative

Mr. J. C. Brown has been recently appointed as representative of the G. Cramer Dry-Plate Company for New England, replacing Ralph P. Brackett, who has represented the Cramer interests heretofore in that territory. On account of Mrs. Brackett's continued ill-health, Mr. Brackett decided to make his future home in Arizona, and will represent his company in that section of the country. Mr. Brown is a well-equipped dryplate-man, with wide, practical experience, having been head of the finishing-department of L. F. Bachrach, Boston, and as operator in the Schervee Studio, Worcester, Mass. His headquarters are 50 Parsons Street, West Newton, Massachusetts.

The Charm of Stereography

The revival of stereoscopic photography—or stereography as it is called by its new, short term—is due to modern, compact and fascinating equipments and, particularly, to the exquisite and charming pictures (stereographs)—positives or paper, glass or autochromes—obtained by this process. The uninitiated have no conception of the amount of pleasure such successful stereographers as Horace A. Latimer and Herbert B. Turner derive from their stereographs, and how much delight they afford their friends by means of their collections of small stereograph-positives in monochrome or in natural colors. Those who are interested should communicate with A. Madeline, 503 Fifth Ave., New York City, who makes a specialty of select, up-to-date stereo-equipments of standard makes.

Eastman Professional Films

The success which has attended the Eastman Professional Films in the various branches of professional photography has led to a demand for a comprehensive treatise describing them in detail. We take pleasure to call the attention of professional photographers to the recently issued booklet, "Eastman Professional Films," obtainable from dealers or direct from the Eastman Kodak Company, Rochester, New York.

Perspective in Catalog-Photographs

The importance of correct perspective to the commercial photographer is emphasized in an editorial in *The British Journal*. It goes on to say that "we have been struck by the many catalog-illustrations we see which lose much of their advertising-value because of the violent perspective of the photograph, usually due to the quite unnecessary use by the photographer of a lens of too short focus. For example, photographs of motor-cars are nearly always made with a lens that gives a picture showing the hood of the engine enormous and a diminutive car-body, which latter surely should interest the prospective purchaser most. We quite understand that the manufacturer of the car is apt, unconsciously, to lay stress on the mechanical features of his car, and therefore he must be expected to insist upon a point of view in which the engine—though covered—is prominent; but at the same time, he does not want his picture of a limousine, for instance, to look as though it were meant for dwarfs with a giant driver, and the back wheels to look half the size of the front ones. This is the photographer's fault, and he might still retain the same point of view and also give correct perspective if he would only use a longer focus lens and get farther away from the subject. What we say of motor-cars holds true of most other large objects that are photographed for catalogs—furniture, pianos, machinery, and so on.

Uneven Fixation of Bromide Prints

A very bad practice, which, unfortunately, is very common, is to allow too large a number of bromide prints to accumulate in the fixing-bath, which is in such cases generally inadequate in size of container and quantity of solution for the amount of work required. The result is that not only is there danger of uneven fixation, no matter how long the prints are immersed, but that there will be an inequality of depth and color due to the varying times which the prints have been subjected to the action of the hypo. With some brands of paper the difference is very noticeable, whereas in others it is slight. This can be tested easily by taking out a print after five minutes fixing and leaving another of precisely similar depth in the bath for an hour; better still, let a print be cut in halves and the halves compared after treatment. It takes only a few seconds to remove a proportion of prints from the hypo to a dish of plain water, and this should be done at regular intervals and not only at the end of the batch. When prints are being made in dozens and half-dozens, it is easy to tell from the subjects which prints have had sufficient time. A simpler way is to have two fixing-baths, and to use them successively. When one is full of prints, start on the second; when this is full, remove the prints from the first dish to the washer and start this again. This obviates the necessity of sorting out the prints and takes very little time, indeed, as compared with the bad old way.—*British Journal.*

Sample Copies of Photo-Era

In the past, we have always been glad to send sample copies of Photo-Era in response to requests. To-day, conditions over which we have no control, have compelled us to discontinue this practice. In compliance with governmental regulations with regard to paper-conservation, we print enough copies of Photo-Era to meet the demands of paid subscribers, photo-dealers, advertisers, news-agencies, and no more.

Requests for sample copies cannot be honored unless they are accompanied by twenty cents in stamps. Perfect copies of Photo-Era will be sent promptly, postpaid, in response to all such requests.

Please Write Your Name Legibly

The importance of writing one's name clearly, particularly in matters of business, is shown by the fact that several governmental departments require absolutely that the signature to any order, document, requisition or communication be *typewritten*. The necessity of this ruling is obvious.

Photo-Era has among its files, awaiting attention, a number of letters, orders and photographs, many of the latter having been entered in several of our competitions. Unfortunately, the names of the senders are written so hurriedly, or with the intention to preserve a characteristic signature, as to be entirely illegible—except to the signers themselves.

Moral: be reasonable, when certain of your communications remain unanswered; or, to ensure attention, *typewrite your signature!*

Frank S. Wilmot Joins the Haloid Company

Mr. Frank S. Wilmot, for many years president and general manager of the Defender Photo-Supply Company, of Rochester, New York, has associated himself with the Haloid Company of that city. The Haloid Company will certainly benefit by the long and practical experience of Mr. Wilmot in the photographic trade as manager of a well-known Rochester firm.

XUM

Through a

Bausch & Lomb Tessar

ANASTIGMAT

Bausch & Lomb Tessar IIb Anastigmat Lens, F.6.3. One two-hundredth of a second at F.8. Good sunlight. This is a very small part of a 2½ x 4¼ negative, enlarged 4½ times. No retouching.

THIS little Whippet turned turtle in the old canal bed at Schenectady the first day of the Victory Loan Drive. Its driver was almost killed.

Riggers were putting it on its "feet" again when this picture was taken. It was actually falling when the lens got it.

The light was good when the sun shone; dark when the swift, thick clouds obscured the sun. Quick photography is difficult such days.

Bausch & Lomb Tessars, F.6.3 or F.4.5, give ample illumination—even without sunlight. Look into the definition, depth of focus and flatness of field in this picture—4½ times enlarged as you see it here.

Pictures like this—and better than this—are usual with Bausch & Lomb Tessars—which is one reason for acknowledged Bausch & Lomb leadership.

Bausch & Lomb Optical Co.

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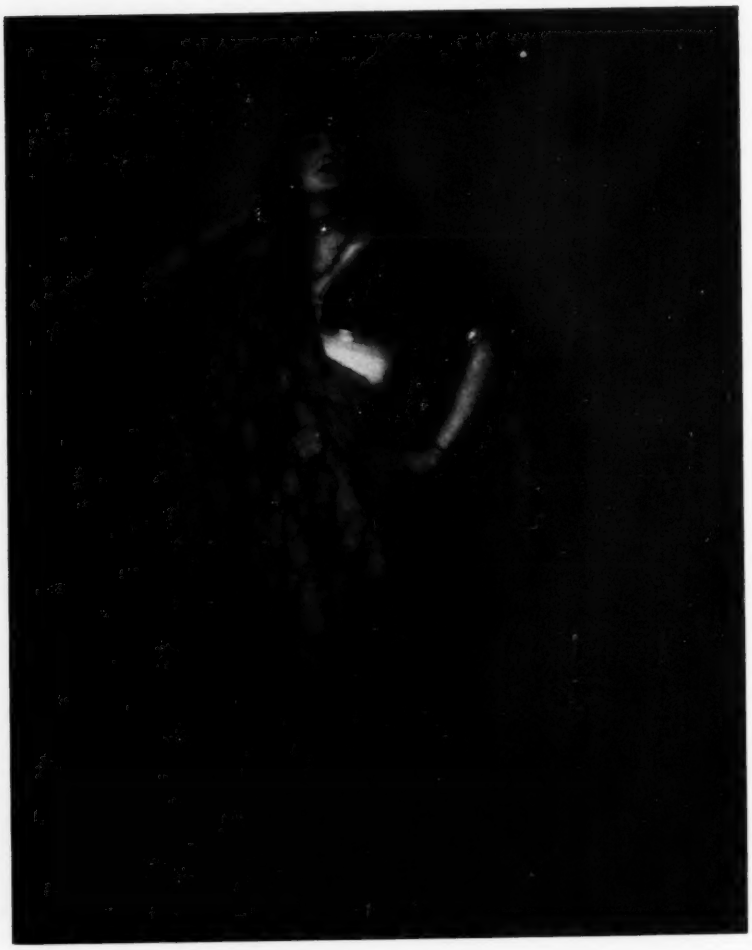
Leading American Makers of Photographic Lenses, Microscopes, Projection Apparatus (Balopticons), Ophthalmic Lenses and Instruments, Photomicrographic Apparatus Range-finders and Gun-sights for Army and Navy, Searchlight Reflectors, Stereo-Prism Binoculars, Magnifiers and Other High-Grade Optical Products.



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